FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

DECEMBER, 1947

OHIO STATE UNIVERSITY
DEC 23 1947
LIBRARY

Giant Smoke Column Rises from Blazing Rubber Dump at River Road, Barking, Essex, England. This Recent Fire Caused a Loss Estimated at Five Hundred Thousand Dollars

A CASE - SHEPPERD - MANN PUBLICATION

"SAVING LIVES"

The Biggest "Kick" in Fire Fighting!

Confident because he knows there's an Emerson Resuscitator handy.

It is not only smoke victims and your own firemen that may need quick and dependable Emerson resuscitation within handy reach on your ladder truck or other apparatus.

How often do you get a call to a riverbank where seconds count and lives depend upon the quick application of a portable resuscitator that's equipped to revive more than one patient at the same time?

That's why so many fire departments have **EMERSON RESUSCITATORS.** They are simple to operate, safe to use, and dependable.

Ask for a free demonstration.

J. H. EMERSON COMPANY

Representatives in Principal Cities

22 COTTAGE PARK AVENUE CAMBRIDGE, MASS.

Simultaneously alerting pedestrians and all traffic . . . while insuring safety to your vehicle and crew . . . the compelling effect of the Propello-Ray's roving blade of red light gets you *through*.

Double action means quicker re-action—for the natural warning of red is intensified in the Propello-Ray Light by a sweeping, rotating beam that can't be ignored.

Any hour . . . any season . . . the urgency of your call is dramatically announced with scintillating silence . . . there are no noisy gears or complicated parts in the high candlepower, sealed-beam Propello-Ray Light. All moving parts are handsomely greased in streamlined chrome weather-proof housing to guarantee dependable, satisfying service.

FEDERAL ELECTRIC COMPANY, Inc.

SIREN HEADQUARTERS

2702 SOUTH STATE STREET · CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

CONTENTS

Vol. 100 December, 1947 No. 12

	Page
With the Editor — By Fred Shepperd	861
Preventing Fires Involving Petroleum Products — By George F. Prussing	862
Some Lessons Taught by the New England Disaster — By Roi B. Woolley	865
Providence Almost Repeats the Cocoanut Grove Disaster — A Staff Account	868
Tests Give Data on Effects of Wetting Agents — A Staff Report	869
How East Windsor Hospital Prescribes Fire Protection — By M. W. Bowman	870
Emergency Unit Proves Worth in Norristown Fire Department	871
Portland, Ore., Firemen Subdue Dangerous Fire in Gas Works — A Staff Report	872
The Round Table — Schools and Drills for Officers	877
Manufacturers' Announcements	878
The Watch Desk — By Roi B. Woolley	879
False Alarms	880
World Wide Fire News — By Roi B. Woolley	889
What's Burning?	891
Questions and Answers	893
Persons in the News	895
Correspondence	903

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

The Record Speaks!

THIS year our holiday sentiments are tempered by the sobering realization that 1947 was the worst year in history in point of loss of life and property from fire.

● And this — despite our greatest effort in fire prevention and control, — during which, the evidence will show, more members of the fire service were killed or injured than in any previous twelvemonth.

● Our Yuletide joy is tempered, too, by the fact that we are not only having more "business" in the fire service, but we're still trying to handle this worsening "business" with out-moded fire fighting facilities, too few firemen, and too much apathy on the part of both public and civic officials.

● If the nation would like to give itself a "Merry Christmas — and a Happy New Year," there is no better way to do it than to take to heart the lesson of 1947 — and let Santa present the fire service with the gift of those essentials it needs so greatly.

● As for ourselves, FIRE ENGINEERING has much to be thankful for. We conclude one of our biggest years in point of readers and of what we've been able to bring those readers in volume and quality of editorial and advertising content.

● To you who have contributed so much to our Yuletide joy we extend the old, old wish: "A Very Merry Christmas, and a Happy New Year!"

The Publishers

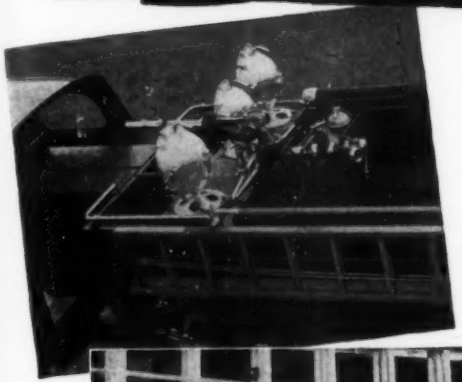
FIRE ENGINEERING

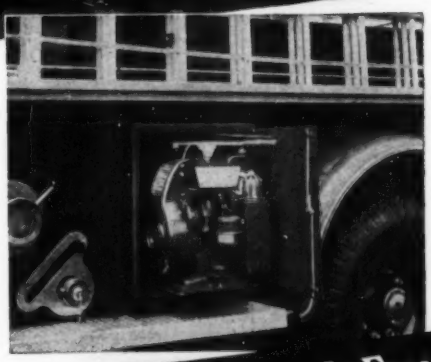
The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price: U. S., Latin America and Canada, $3.00 a year; Foreign, $4.00; Single copies, 35c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1947, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Eastern Representative, ALFRED J. HOUGHTON; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 8 So. Dearborn St., Chicago 3, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

AMERICAN-LAFRANCE

engineered for mounting all your equipment





The Cab-Ahead-of-Engine pumper sets a new standard in fire service utility. No sacrifice in accessibility of operating units. Mounting for auxiliary lighting generator provides weatherproof housing with sliding base permitting operation on or off the apparatus. Accessible mounting for flood lights is provided. Deluge gun can be operated on pumper or removed as required. FOAMITE generator for operation on or off the apparatus is provided. These are just a few examples of the versatility of American-LaFrance pumper design.

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

ALL WE HAVE CLAIMED . . . AND MORE

Fast action, minimum water damage, and complete extinguishment on all types of fires—

All these claims and more have been proved by hundreds of FMC High-Pressure Fog Fire Fighters now in use.

Nothing else like it

Users of FMC units tell us there's nothing else like it! You arrive at the fire ready to go to work. FMC High-Pressure blasts, cools and smothers flame—and FMC units do the job with much less water than other systems.

That means you reduce fire losses two ways: *First,* by quick extinguishment; *Second,* by cutting down water damage.

You owe it to the people you protect to investigate FMC High-Pressure for your department. Get the facts.

PROOF

STEVENS POINT, WISCONSIN. *"We have made 441 runs since we received our high pressure truck. During that time we have laid a line to a hydrant just 9 times in two years, to supply water to our booster tank, as our tank holds only 150 gallons."*

• • •

BRIGHTON, MICHIGAN. *"We believe that we are extinguishing fires that could not possibly be managed with other types of equipment."*

• • •

ROCK FALLS, ILLINOIS. *"High pressure used on 64 fires for a loss of $4,975.00."*

• • •

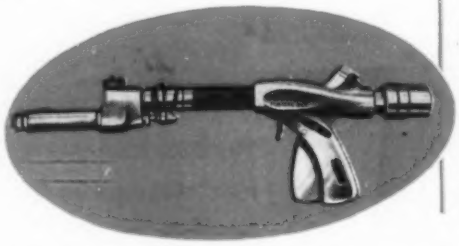
REDFORD TOWNSHIP, MICHIGAN. *"Forty-eight fires in 1947 to date. All were extinguished with high pressure."*

• • •

KENT COUNTY, MICHIGAN. *"All types of fires—720 fire runs—recently added another Bean High Pressure truck, making six Bean trucks in all."*

UNDERWRITERS' LABORATORIES APPROVED

ONE MAN CAN HANDLE the patented Bean fog fire gun. Provides every type of fog pattern—everything you need for high pressure work.



MUSKEGON, MICH. *Standard FMC Fog Fire Fighter recently delivered to Muskegon, Mich. Carries its own water supply—provides two guns of 30 gallons each—850 lbs. pump pressure—complete in every respect.*

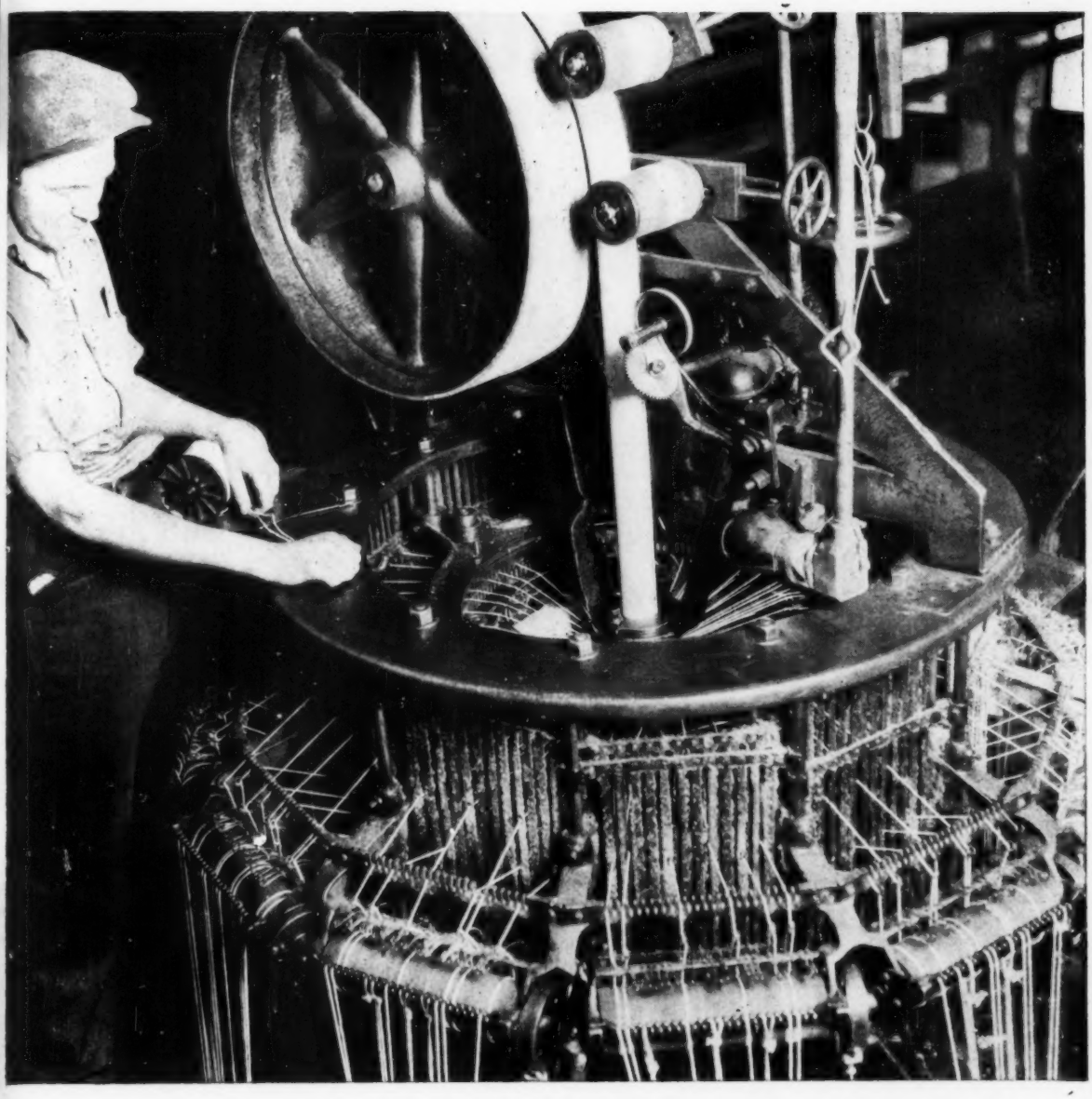
FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., DEPT. 126, LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS



It helps make B. F. Goodrich fire hose lighter and better than prewar hose

THAT machine in the picture is responsible for one of many improvements in B. F. Goodrich fire hose. It weaves the jacket in such a way that it's lighter than previous jackets, yet stronger through the elimination of weak spots.

A new rubber compound — with greatly improved age resistance — was developed for the tube to make it stronger and lighter.

These savings in weight make possible *a total weight reduction of 18% — yet the hose is stronger than ever before.*

Other new features include a new *Koroseal* gasket that speeds up tight coupling — a new mildew treatment that gives the most complete protection possible — an exclusive patented end protection that eliminates failures near couplings.

All these new features make B. F. Goodrich fire hose the hose that is easier to handle and gets into action faster — the hose that outlasts prewar fire hose — reduces trouble and expense. The next time you need fire hose, be sure to specify B. F. Goodrich. *The B. F. Goodrich Company, Industrial Products Division, Akron, Ohio.*

Koroseal—Trade Mark, Reg. U. S. Pat. Off.

B.F. Goodrich

FIRST IN RUBBER

MIDWESTERN
Protective Clothing
for Men of Action!

Here's Protection and Comfort in Your Hazardous Work of Safeguarding Life and Property Against FIRE!

Modern fire fighting calls for ***specialized*** protective clothing . . . clothing that safeguards the fireman's life on every run . . . clothing that enables him to use his equipment to the fullest advantage.

Every Midwestern product combines the thoughts and suggestions of practical Fire Chiefs and firemen from every section of the country . . . and every purchaser profits from years of Midwestern research and experience. That is why the famous Mackinaw Coat and other Midwestern clothing have embodied in their design every feature necessary for the protection and comfort of firemen.

In our vast selection of crude rubber materials you will find a type of fabric suitable for your climate and needs. The softness and flexibility in the high-grade materials used are your assurance of long time service and comfort. Many Fire Chiefs are now including Midwestern clothing in their regular yearly budget and, by placing your order early, you can be assured of this adequate protection when needed.

For complete information, have your Midwestern dealer show you our new garments now manufactured from crude rubber compounds. A letter to the factory will also bring you material samples for your inspection.

We now have available: White, Ivory and Brown crude rubber coats for Chiefs, Assistants and other officers; also all sizes short and ¾ length felt lined Firemen's boots for immediate shipment.

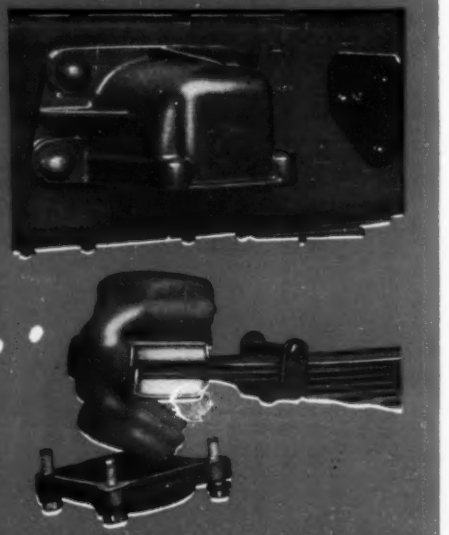
NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

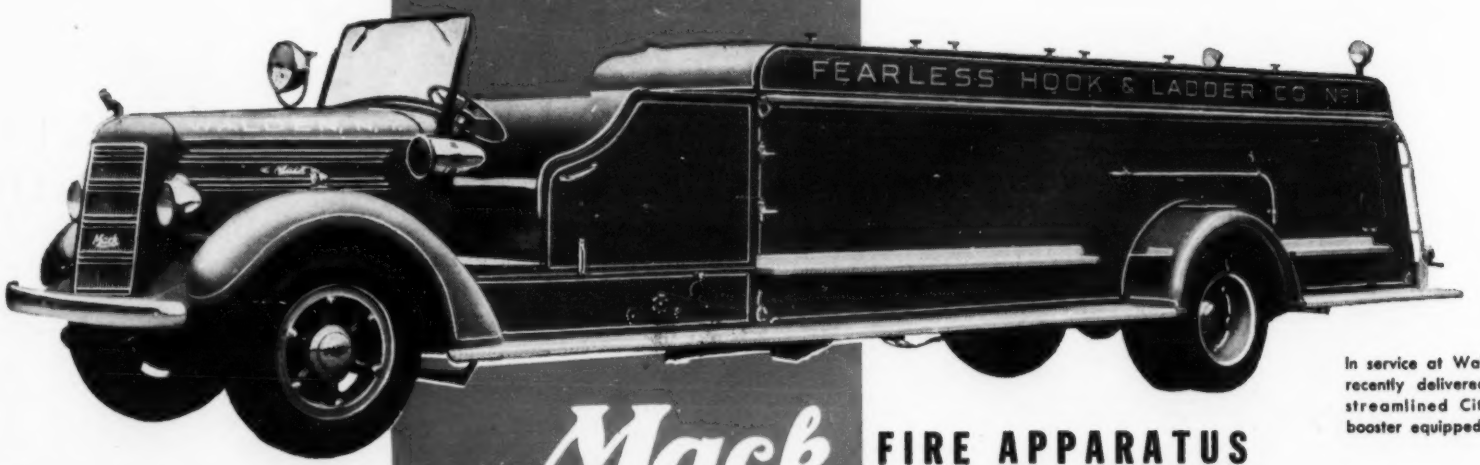
THE RUBBER SHOCK INSULATOR

Only MACK has it . . .



● Count on Mack fire apparatus to stand up better . . . to deliver longer-lasting top performance . . . because of engineering ingenuity, manufacturing thoroughness and attention to detail in every part. An example: the rubber Shock Insulator, developed by Mack engineers over 20 years ago and still the best means of retaining spring ends. These Shock Insulators, by preventing metallic contact between springs and chassis, absorb vibration, reduce wear, eliminate lubrication and adjustment at spring ends. They help provide the smooth, reliable low-maintenance performance for which Macks are noted *. . . and they are found only in Macks.*

When ordering your new apparatus, remember that over 1,000 fire departments have chosen Macks as the finest for modern firefighting.



In service at Walden, N. Y., is this recently delivered Mack Type 45 streamlined City Service Truck, booster equipped.

Mack FIRE APPARATUS

MACK MANUFACTURING CORP.
FIRE APPARATUS DIVISION
LONG ISLAND CITY 1, NEW YORK
Factory branches for parts and service in all principal cities. In Canada, Mack Trucks of Canada, Ltd.

TRIPLE COMBINATION PUMPERS 500 TO 1250 GALLONS . . . SQUAD WAGONS . . . CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

5283

It will help if you will mention FIRE ENGINEERING *when writing advertisers*

STURDY BWH FIRE HOSE
TAKES TOUGH JOBS IN ITS STRIDE

BWH "BOSTON FIRE JACKET" HOSE
Double Jacket
Made with heavy, high tensile, long staple yarns for extra stamina, outstanding quality.

BWH "PARAMOUNT" HOSE
Double Jacket
Exceptionally fine value. Engineered for hard service and long life, yet easy to handle. Highest quality workmanship.

BWH "MILO" HOSE
Single Jacket
Light, flexible hose with good weight jacket and substantial tube. For communities where a light pressure hose is sufficient.

BWH "UNDERWRITERS" HOSE
Single or Double Jacket
Made in strict accordance with the National Board of Fire Underwriter's specifications. Labeled or unlabeled.

Easy to handle on trucks, on the ground, on ladders — yet engineered with real backbone for the hardest kind of service — that's famous BWH Fire Hose.

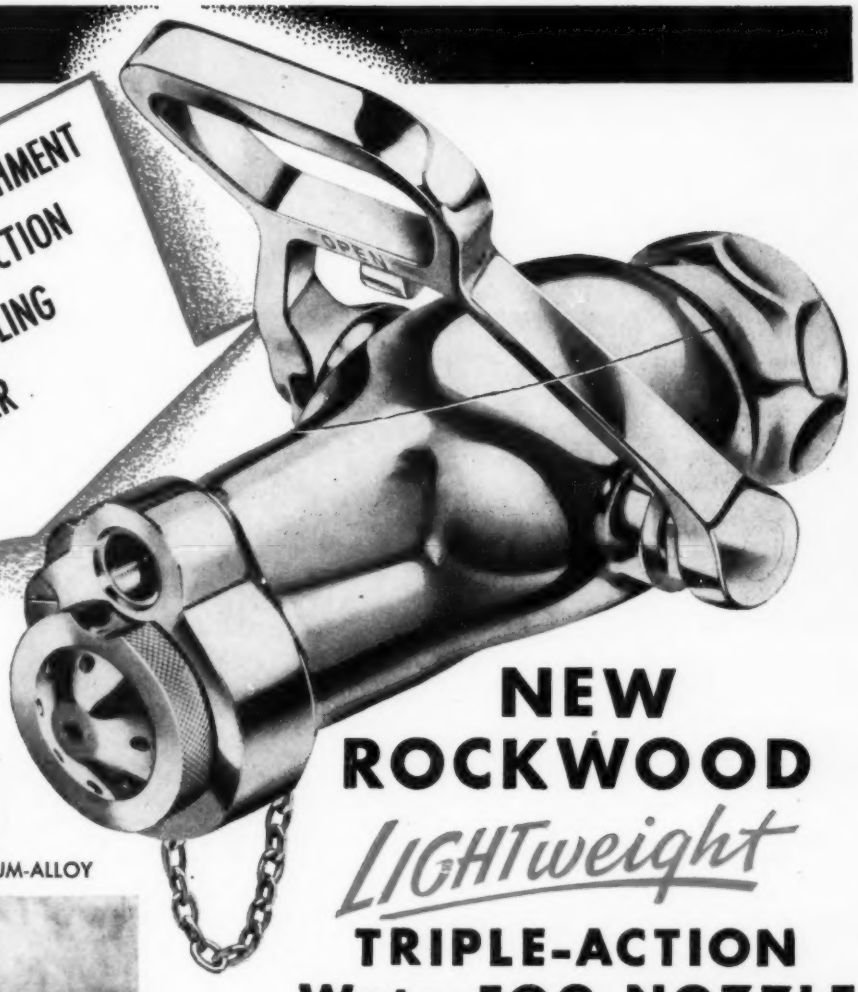
For example, the flexible cotton jacket is woven to produce maximum strength, plus being scientifically balanced to give minimum elongation and twist. Long-aging BWH rubber tubes are bonded to the jacket with a high-grade rubber compound.

The General Detroit Corporation and its subsidiary, the General Pacific Corporation, have recently been appointed exclusive sales agents for BWH Municipal Fire Hose in most localities. Because of their long experience in manufacturing fire extinguishers and motor fire apparatus, they can give you expert advice on all municipal fire equipment problems. Call your nearby "General" representative next time your city needs fire hose. Look for the "General" trade mark in the classified section of your phone book.

NOW! Distributors of famous
BOSTON WOVEN HOSE AND RUBBER CO.
Municipal Fire Hose

THE GENERAL DETROIT CORP.
DETROIT 7, MICHIGAN
NEW YORK • PHILADELPHIA • ATLANTA • CHICAGO • DALLAS
Subsidiary:
THE GENERAL PACIFIC CORP.
LOS ANGELES • SAN FRANCISCO • SEATTLE

✓ FASTER EXTINGUISHMENT
✓ GREATER PROTECTION
✓ EASIER HANDLING
✓ LESS WATER

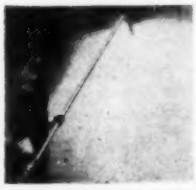


NEW TYPE SG-48
MADE OF SPECIAL ALUMINUM-ALLOY

NEW ROCKWOOD LIGHTweight TRIPLE-ACTION WaterFOG NOZZLE

1 *HIGH VELOCITY* WaterFOG

2 Straight stream



3 *LOW VELOCITY* WaterFOG from new LIGHTweight Extension Applicator

A simple movement of the control handle of the new improved Rockwood LIGHTweight Type SG-48 WaterFOG Nozzle will bring the CORRECT TYPE of discharge to control or put out fires in ordinary combustibles and flammable liquids.

This new fire fighting unit is light in weight and is easy to handle in action and will extinguish fires faster and with less water.

The type SG-48 WaterFOG Nozzle will permit your firemen to reach the very root of the fire and to attack it with less physical punishment. It will also provide them with greater protection from fire, smoke and fumes.

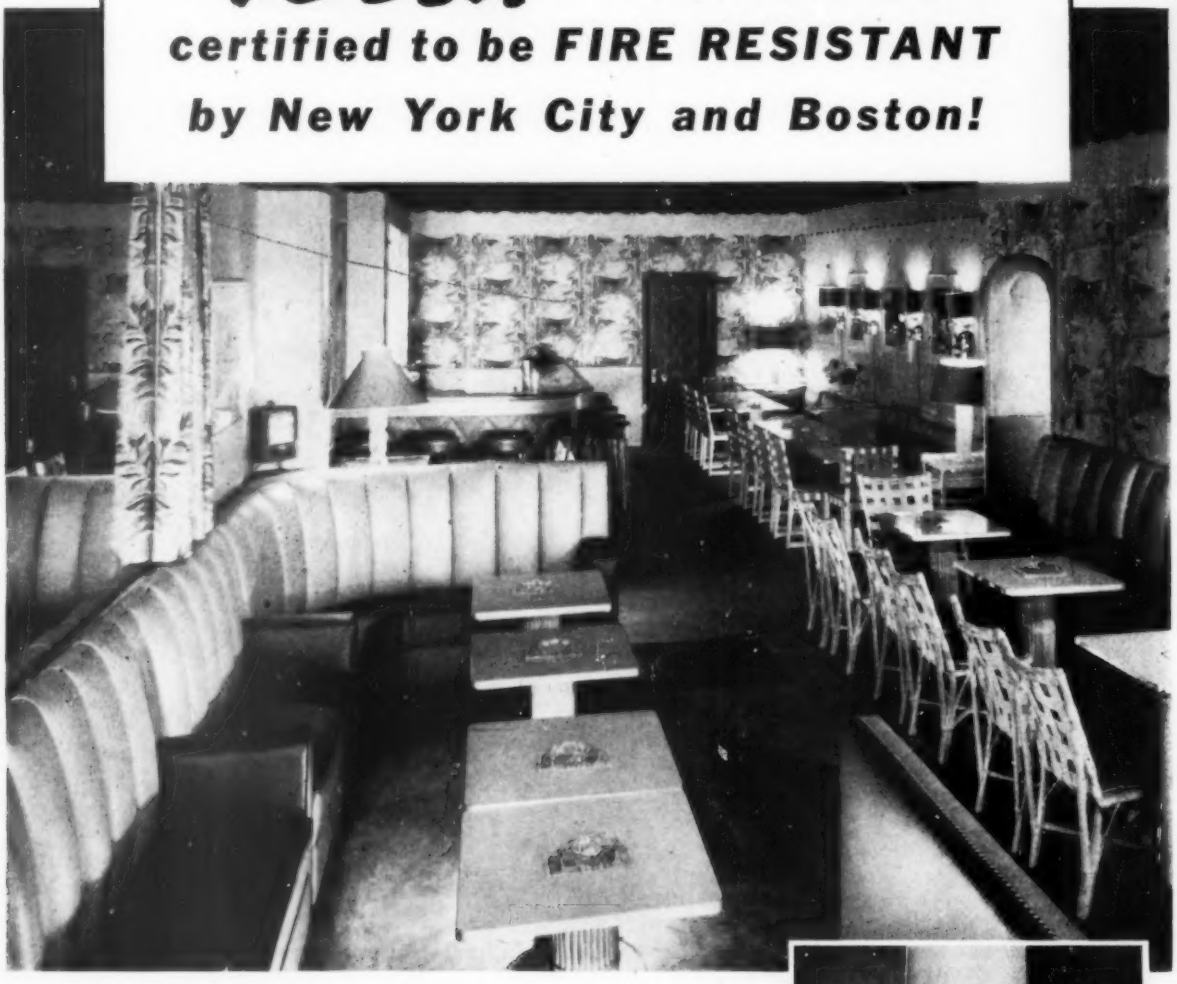
Act now — equip all your fire hose lines with Rockwood LIGHTweight Type SG-48 Triple-action WaterFOG Nozzles. Recommended for use in municipal fire departments, industrial plants, oil refineries, etc.

Rockwood WaterFOG is approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

For more complete descriptive information, write for circular C-501R.

ROCKWOOD SPRINKLER COMPANY
54 HARLOW STREET WORCESTER 5, MASSACHUSETTS
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

TOLEX* UPHOLSTERY
certified to be FIRE RESISTANT by New York City and Boston!

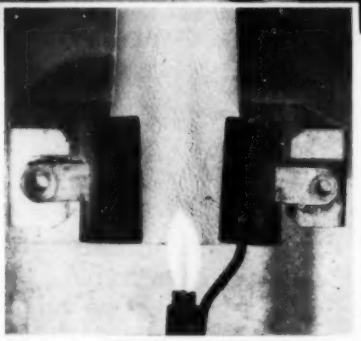


Among progressive cities, the trend is more and more toward flame-resistive requirements in furnishings for places of public gathering.

Today—New York City, Boston and other large cities have fire-resistant requirements for upholstery, wall coverings and interior decorations *which are met by TOLEX F.R. plastic leathercloth.*

TOLEX is a product of Textileather Corporation . . . pioneers in the development of fire-resistant upholstery leathercloth.

Consulting Service available to you! We will gladly send our technical representative to discuss flameproof leathercloth specifications and test methods with fire marshals, fire departments, fire prevention boards or underwriters. There is no charge for this service. Write to . . . Textileather Corporation, Toledo, Ohio.



Flame test demonstrates fire-resistant properties of Tolex.

Experience is by industry achieved, and perfected by the swift course of time.
—Shakespeare

35 Years of Leadership in Leathercloth

*Reg. U.S. Pat. Off.

. . . and **DRENCH** means penetration where you need it most. Tried and proven under actual fire conditions, **DRENCH** is internationally recognized as *the first properly formulated wetting agent* to be used successfully in the field of fire extinguishment. Three important things happen when you add Drench to your water supply.

1. Drench gives greater penetration.
2. Drench cuts extinguishing time.
3. Drench prevents rekindles.

You get triple action when you use Drench and effectively increase your water supplies. In addition, you save time, money and man-hours in the complete extinguishment of fire in solid combustibles and oils with flash points of 100°F. or higher.

When you order a wetting agent from your supplier, be sure to specify Drench.

Do not use in Soda Acid Extinguishers or Calcium Chloride Solutions

ARNOLD-HOFFMAN & CO., INC.

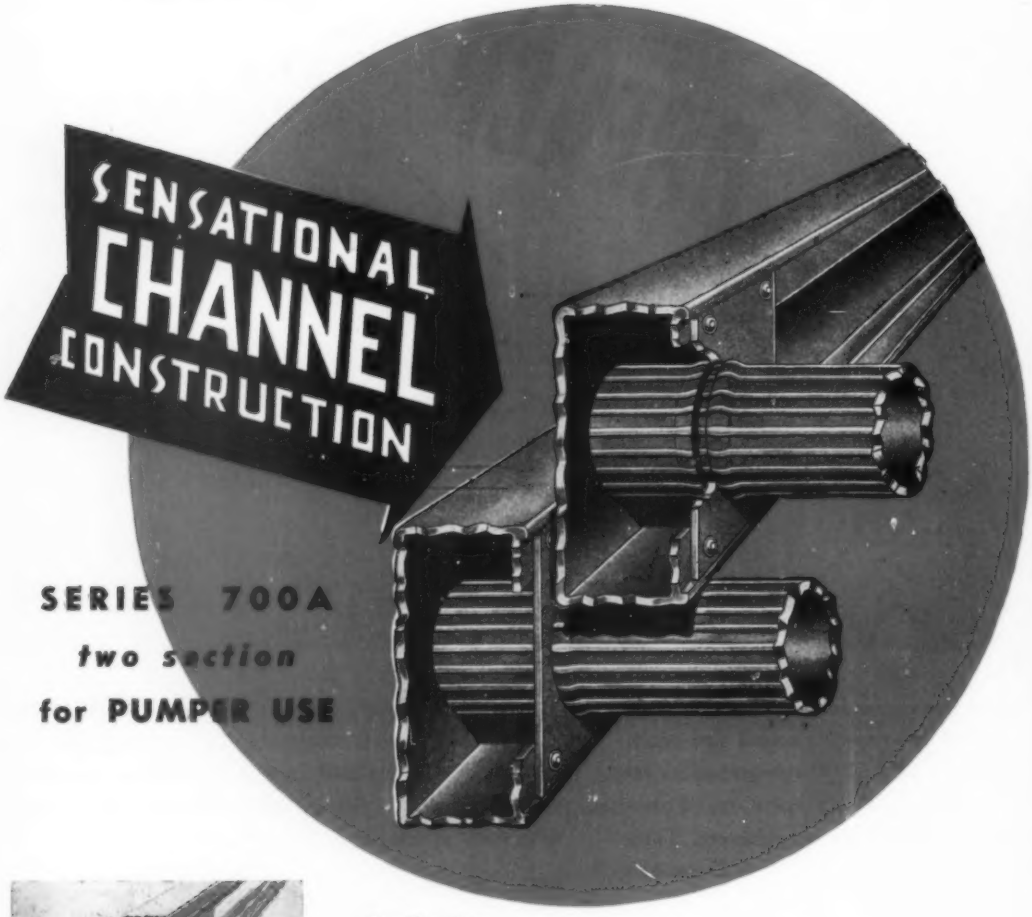
Fire Specialties Division

PROVIDENCE, R. I.

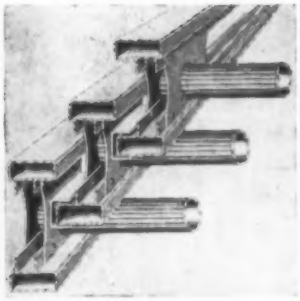
ESTABLISHED IN 1815 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.
NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

Trade Mark Reg. U. S. Pat. Office

Only DUO-SAFETY FIRE LADDERS Give You...



SERIES 700A
two section
for PUMPER USE



For Service Trucks

Companion ladder to the 700 Series is the famous 500 Series, featuring exceptionally strong tubular construction. Available in 2- and 3-Section extensions, roof, wall and folding Ladders.

Only in Duo-Safety All-Aluminum (Duralumin) fire ladders do you get all the extras provided in sensational new channel construction. Series 700A, brings light weight for ease of handling, practically indestructible construction, extra long life and positive safety! This outstanding ladder design is available in 2 and 3-section extensions, roof and wall ladders . . . in all standard lengths. A free Fire Ladder line file folder is available upon request.

DUO-SAFETY LADDER CORP.

809 NINTH STREET, OSHKOSH, WIS., U. S. A.

NEW!

IT'S ALFCO'S LATEST ENGINEERING FEAT . . . THIS AMAZING NEW *Foamite Airfoam*-GENERATING NOZZLE FIGHTS FIRES Quickly - Effectively - Easily

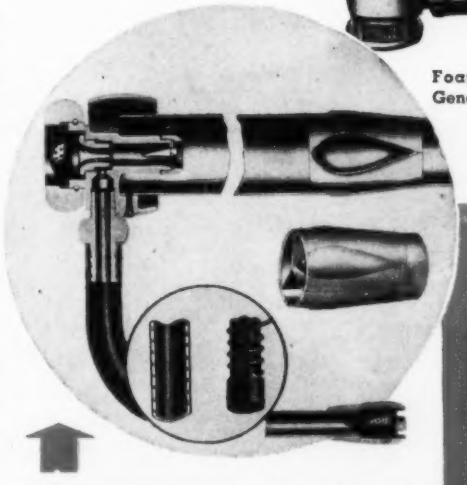
ALFCO

New and novel! The Foamite Airfoam-Generating Nozzle — a strikingly new and out-of-the-ordinary foam-making, fire-fighting nozzle for extinguishing fires in flammable liquids as well as those in ordinary combustibles. The Foamite Airfoam floats with free flowing rapidity on burning liquids and smothers fire by cutting off the oxygen supply.

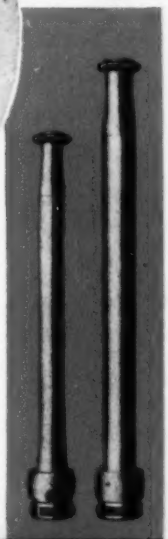
It is the postwar nozzle* for which you've been waiting, an airfoam-making nozzle of ingenious design that is light in weight, fast in action, easy to work, and efficient in service.

Foamite Airfoam Liquid is protected against freezing to 25°F; will operate with fresh or salt water; with hot or cold water; will not ferment or mold; is not susceptible to decomposition from bacteria; is non-corrosive.

The Foamite Airfoam-Generating Nozzle is furnished in two capacities, Models 300 and 600 producing at 100 psi operating pressure, approximately 300 and 600 gallons of Foamite Airfoam respectively.

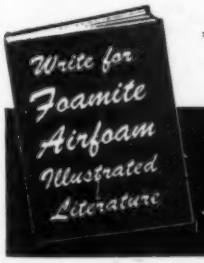


Foamite Airfoam-Generating Nozzles, Models 600 and 300



Shown is sectional view of Model 600 Foamite Airfoam-Generating Nozzle. It mechanically creates Foamite Airfoam thru a scientific mixing of water, air, and Foamite Airfoam Liquid. Phantom view shows specially designed "tear drop" obstruction for giving stream equal velocity on leaving tip. Note wire-reinforced pick-up hose construction.

*Patents pending on this new Foamite Airfoam-Generating Nozzle.



OUR 2nd Century of Leadership in FIRE PROTECTION

AMERICAN-LAFRANCE-FOAMITE Corporation

ELMIRA · NEW YORK · U.S.A.

Punishment by the gallon!

When gallon upon gallon of water is forced through a fire hose under high pressure, you have to be sure the hose can take the punishment.

The way to be sure is to use *dependable* Hewitt Fire Hose!

Its smooth rubber tube assures fast flow and long life. Its jacket is woven under carefully controlled conditions of temperature and humidity. This helps to prevent stretch and minimize elongation and twist.

Remember, too, that Hewitt has been making high-quality fire hose since 1872!

Choose between the regulation white hose or wax-and-gum treated hose. Standard sizes for all fire-fighting applications are available. Write today for details.

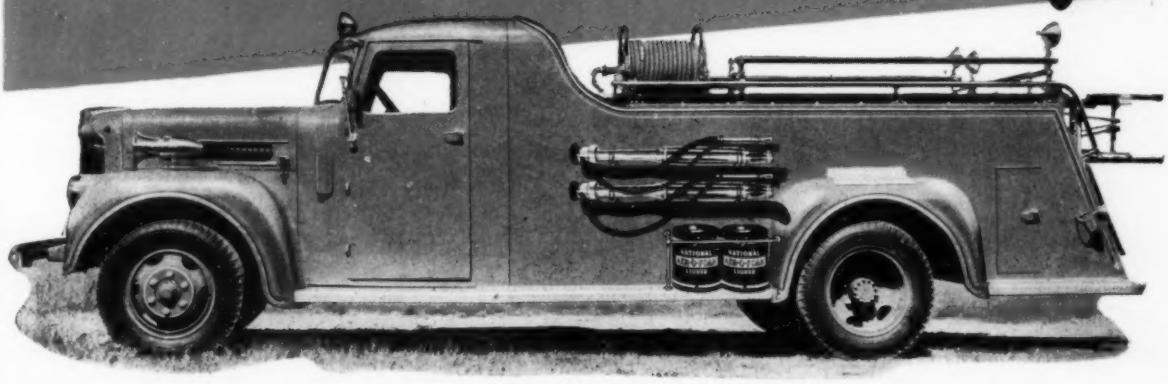
Hewitt Fire Hose

HEWITT RUBBER
DIVISION
HEWITT-ROBINS INCORPORATED
240 KENSINGTON AVENUE, BUFFALO 5, NEW YORK

HEWITT-ROBINS INCORPORATED HR

Kindly mention FIRE ENGINEERING *when writing advertisers*

FIRE-FIGHTERS PACK AER-O-FOAM for TOUGH OIL FIRES!



Experienced fire-fighters know that NATIONAL Aer-O-Foam, war-proven by the U. S. Navy, is now MUST equipment for speedily putting out, and keeping out, gasoline, oil or chemical fires.

NATIONAL Aer-O-Foam, a mechanical foam, forms a thick, tough and lasting blanket. This blanket seals flammable gases in, *keeps oxygen out,* actually smothering the fire. It prevents flash-backs, insulates threatened areas. It flows rapidly, clings fast to angular as well as level surfaces and is *non-corrosive.* It can be applied in a stream or fog.

NATIONAL FOAM manufactures chemical and mechanical foam, specially designed nozzles and other equipment for applying them. Our thoroughly trained staff of engineers is ready to serve Fire Departments. We have the experience to solve your problems. *Write, Wire, or Call.*

NATIONAL FOAM SYSTEM, INC.

Headquarters for Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

It will help if you will mention FIRE ENGINEERING *when writing advertisers*

ADT Protection for THE JOHN HANCOCK BUILDING

Plans for the new 26-story addition to the Home Office Building of the John Hancock Mutual Life Insurance Company in Boston, include among its outstanding features the latest and most efficient types of protection, including ADT Central Station Protection Services.

These services, which safeguard against fire, burglary and other special hazards, were selected because of their adaptability to buildings of this character and as a result of the Company's favorable experience with ADT Protection over many years.

Among the services to be provided are: Automatic Fire and Smoke Control, which detects the presence of fire or smoke in air ducts and automatically closes dampers, shuts off fans, etc.; Manual Fire Alarm Service; Watchman's Reporting Service; Phonetalarm (sound detection) for vault protection, and Emergency Police Call Service.

Write for complete information regarding these and other ADT Services.

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH CO.
155 Sixth Avenue, New York
Central Station Offices Located in all Principal Cities of the United States

Cram & Ferguson, Architects and Engineers
Turner Construction Company, Builders

ADT

Electric Protection Services
AGAINST FIRE · BURGLARY · HOLDUP
A NATION-WIDE ORGANIZATION

SAVED!

E & J RESUSCITATOR SAVES GIRL'S LIFE AND AVERTS CANTON, OHIO LAKE TRAGEDY

On July 3 little Donna Jean Rothermel was found lying face down in Meyers Lake. An E & J Resuscitator was rushed to the scene. The Resuscitator was used for about one hour before Donna Jean was revived. She was then taken to Aultman Hospital. The recovery was complete.

This is just one of the many miraculous successes with the E & J Resuscitator, since installed by Chief George E. Jacob of the Canton Fire Department.

E & J Resuscitators have been adopted by Fire Departments and Emergency squads from coast to coast. Sound evidence and good reason why you, too, should be E & J equipped.

Write to listed address nearest you for complete information or demonstration.

Drexel Bldg.
Philadelphia

585 Boylston St.
Boston

1618 Franklin St.
Oakland

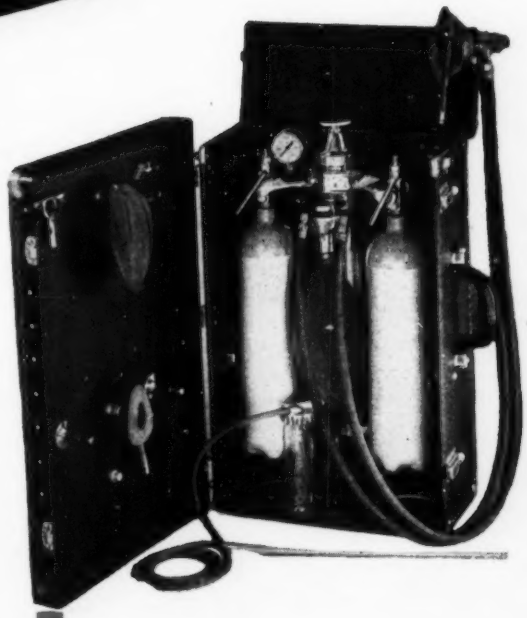
3329 W. Wash. Blvd.
Chicago

17 East 42nd St.
New York City

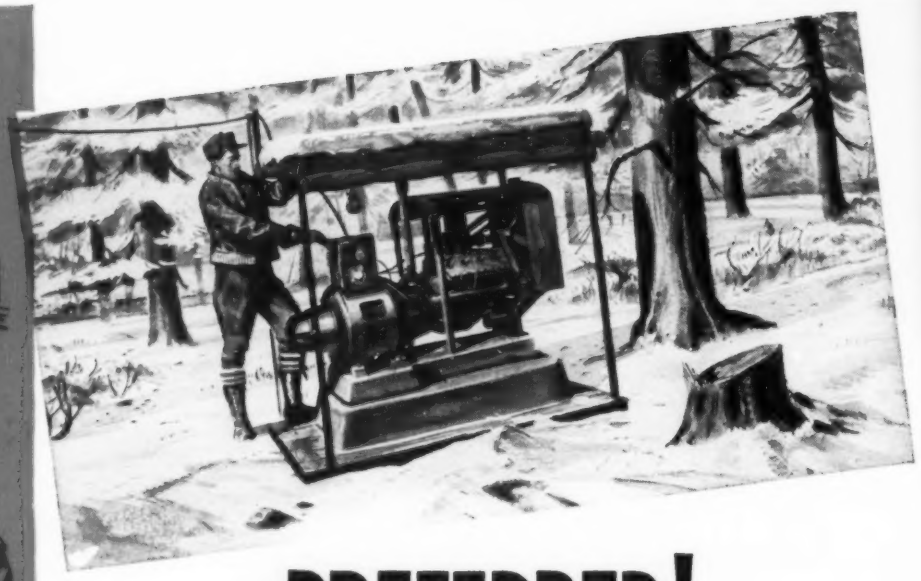
313 University St.
Seattle

3900 Grandy Ave.
Detroit

69 E. 4th So. St.
Salt Lake City



E & J MANUFACTURING CO.
6116 San Fernando Road
Glendale, California



PREFERRED!

—for RELIABILITY . . . for ECONOMY . . . and for UNIVERSAL FORD SERVICE!

Whether you *design* and *build* engine-powered industrial equipment, *sell* it, or *use* it, here is a fact so vital that it deserves your most earnest attention:

Nearly all such machinery—whether pumps, electric generating plants, compressors, power units, saw rigs, ventilating and spraying units, or other portable equipment—by its very nature, will spend its service life on jobs where it's "on its own"—where reliability and ready maintenance service are all-important—and where the transportation of motor fuel makes gasoline economy a constant concern.

FORD-BUILT ENGINES PROVIDE UNIQUE ADVANTAGES IN SUCH SERVICE. Ford engine reliability is known and respected the world over. Millions of Ford vehicle owners and automotive mechanics are thoroughly familiar with Ford engines. Ford economy is famous. And Authorized Ford Service is available in every community of any importance.

Certainly, then, if your power requirements come within the range of 40 to 100 horsepower, you could not choose an engine which would offer you as many positive advantages as Ford.

Three Ford-built engines are now available, as shown below. You can buy them singly or in quantity, through any Ford Dealer or from Ford Motor Company. For detailed specifications and dimensional data, write—

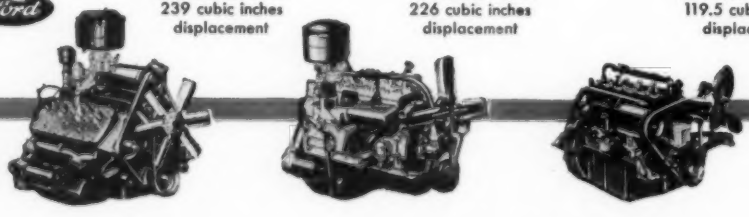
FORD MOTOR COMPANY
Industrial and Marine Engine Department
3523 SCHAEFER ROAD, DEARBORN, MICHIGAN

Ford

THE 100-H.P. V-8
239 cubic inches displacement

THE 90-H.P. SIX
226 cubic inches displacement

THE 40-H.P. FOUR
119.5 cubic inches displacement



FORD-BUILT ENGINES

FOR INDUSTRIAL AND MARINE POWER

TAKE A GOOD LOOK AT INDIAN FIRE PUMPS

Filler cap is leak proof. A strainer prevents leaves and rubbish from entering hose and pump. Easy pumping throws 30 to 50 ft. stream or spray under strong pressure.
Standard nozzle is interchangeable for stream or spray or adjustable nozzle is available. Adjusts instantly to stream, long distance spray or fog mist.
5 gal. tank may be had in Zinc Grip Steel, Solid Brass or in Chrome Finish. All tanks are air-cooled for comfort and form fitting.
INDIAN
AIR COOLED TANK

gal. tank is curved to the back. Built strong long, hard service. any INDIAN FIRE UMPS are still giving od service after 10 ars in operation.

roperly formulated wetting agents to be effective only used in INDIAN FIRE UMPS. Including galvanized steel nks now coated on the inside with asphaltic base paint, also solid brass and rome plated nks.

PATENTED

You can't know what a strongly built, highly scientific fire fighting job an *INDIAN FIRE PUMP* is until you examine it carefully. Every feature which will make it more efficient and economical to use has been included. No wonder hundreds of users say *INDIANS* are the last word in fast, on-the-spot fire protection.

Now is the time to order your *INDIAN FIRE PUMPS* for 1948! Be ready for any fire fighting job. Remember clear water alone is all you use—no chemicals.

Catalog and price list sent on request.

D. B. SMITH & CO. 406 Main Street UTICA 2, N. Y.

INDIAN FIRE PUMPS

PACIFIC COAST AGENTS

Equip. & Rubber Co., 73 Brannan St., San Francisco, Cal.
& Mine Supply Co., 2700 4th Ave. So., Seattle, Wash.
Barnett Co., 2405 S.E. 8th Ave., Portland, Oregon
Fred B. Barnett Co., 400 Spring St., Klamath Falls, Ore.
Fred B. Barnett Co., Broadway & Harris St., Eureka, Cal.
Roy G. Davis Co., 617 E. 3rd St., Los Angeles, Cal.

CANADIAN AGENTS

& Robbs Equip. Co., 595 W. 5th Ave., Vancouver, Canada
Duke Equipment Co., 297 Duke St., Montreal, Canada

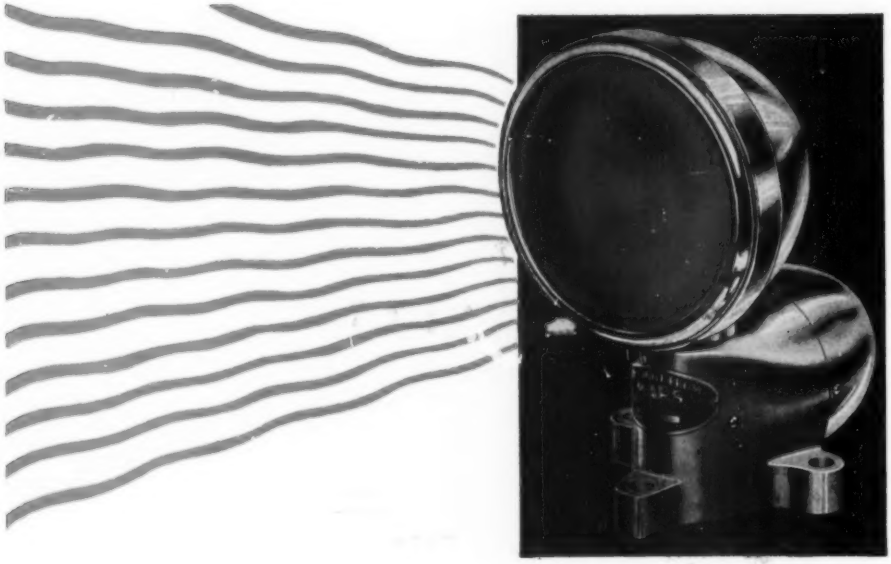
GUARDING THE LIVES OF MILLIONS FROM COAST TO COAST

MARS SIGNAL LIGHT CO.

***Manufacturers of* AMERICA'S LARGEST SELLING WARNING SIGNAL LIGHT**

WISH YOU A

Merry Christmas and a Happy and Safer 1948



IF YOUR APPARATUS OR OFFICERS' CARS ARE NOT NOW EQUIPPED WITH

MARS LIGHTS

BETTER MAKE A NEW YEAR'S RESOLUTION TO INSTALL THEM EARLY IN 1948

WHY BUY ANYTHING BUT THE BEST?

INSIST ON MARS WHEN YOU ORDER NEW EQUIPMENT
INSTALL IT ON PRESENT EQUIPMENT

MORE THAN 10,000 IN USE FROM COAST TO COAST

IMMEDIATE DELIVERY

For prices and complete information write

MARS SIGNAL LIGHT CO. 5737 W. DIVISION ST. CHICAGO, ILL.

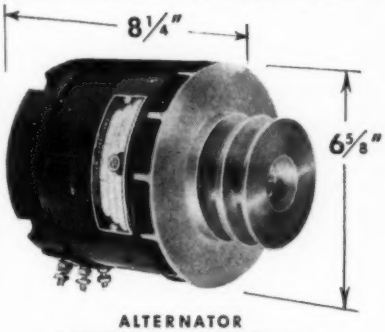
It's MARS from Coast to Coast

MARS LIGHT IS FULLY GUARANTEED FOR FIVE YEARS
MARS HAS NEVER FAILED TO BACK UP THIS GUARANTEE AND NEVER WILL

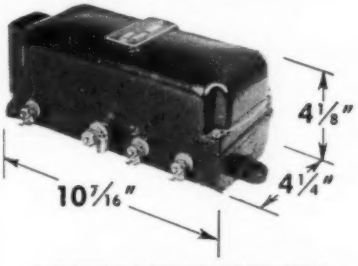
It will help if you will mention FIRE ENGINEERING *when writing advertisers*

WHY TAKE CHANCES

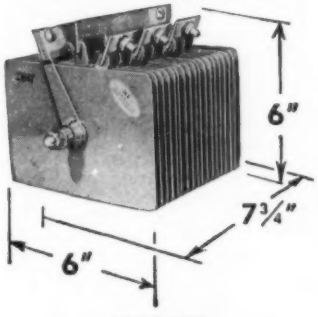
—TRYING TO MEET UNUSUAL CURRENT DEMANDS WITH A CONVENTIONAL D-C GENERATING SYSTEM?



ALTERNATOR
WEIGHT . . . . . 31 Pounds
RATING . . 14 Volts—100 Amperes



3-ELEMENT VOLTAGE REGULATOR
WEIGHT . . . . . 4¾ Pounds
RATING . . 14 Volts—100 Amperes



RECTIFIER
WEIGHT . . . . . 7 Pounds
RATING . . 14 Volts—100 Amperes

Similar 3-unit system available for 6-volt service. SYSTEM WEIGHT: 41 Pounds. RATING 60 Amperes, 420 Watts

FOR THE BEST PERFORMANCE MAKE YOURS A *COMPLETE* LEECE-NEVILLE STARTING AND GENERATING SYSTEM—INSTALL A LEECE-NEVILLE CRANKING MOTOR AND SWITCHES FOR DEPENDABLE STARTING

THIS A-C SYSTEM *by* LEECE-NEVILLE

Gives 50 amps (14 volts) at zero miles per hour!
Permits the unlimited use of electrical accessories!
Keeps your batteries prepared for any emergency!

● Even with a fire department vehicle standing still, engine idling—this amazing new generating system by Leece-Neville delivers 50 amperes (potential 100) when proper drive ratio is provided! And just the lightest touch on the accelerator assures 100-ampere output.

When you have unusual current requirements, you can count on this *high-output* A-C system to support all or part of the load itself while maintaining your battery. This means you can employ two-way radio, radio-telephone, sirens, special lights and any other electrical accessories without limitation—even at zero miles per hour! System weighs *60% less* than comparable D-C equipment—occupies less space—requires less support—*costs less.* See it at your nearest Leece-Neville Service Station or return coupon below for literature giving further important details. *The Leece-Neville Company, Cleveland 14, Ohio.*

Here's a coupon it will pay you to mail TODAY!

THE LEECE-NEVILLE CO.
Dept. 19, 5363 Hamilton Ave.
Cleveland 14, Ohio

Please send descriptive literature on your new, high-output A-C Generating System.

Name .....

Address .....

.....

LEECE-NEVILLE

Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

Adequate Fire Protection

is the most acceptable gift you can provide your community

Three-Fold Fire Alarm Box on Type U1000-6 Pedestal

THE safety, happiness and well-being of any community depends, in a great measure, on the adequacy of its protection against fire hazards.

With the hope that the joys of the coming Christmas season may be unimpaired and unusually free from the destructive consequences of fire out of control, The Gamewell Company takes this occasion to extend its thanks to all Fire Fighters for the confidence and appreciation so universally extended to the Gamewell Signaling System — the first line of defense against fire — and to wish each and every one a very Merry Christmas and the utmost success during the New Year.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS, MASSACHUSETTS

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

IEERING

FIRE ENGINEERING

DECEMBER, 1947 VOL 100. NOo 12

With the Editor

Preventing A Recurrence The New England cataclysm is now being interpreted, for posterity, in terms of property and other losses. Befittingly, the figures are being written in red ink.

Meanwhile, in keeping with the pattern of practically every other major catastrophe, the heads of state, and civic government are meeting in extraordinary session to devise ways and means for preventing a repetition of the October catastrophe.

All of which is as it should be. But in this connection we can't help wondering about two things. The first is: why wasn't coordination and mutual aid thought about years ago?

We don't like to say "we told you so" but we can't help referring to our editorial of January, 1945, issue, which followed hard on the heels of V-J Day, in which we pointed out that the war's end would see the end of war-emergency laws and ordinances which effected cooperation and reciprocal relations between municipalities and areas in time of emergency. We suggested then that states and others take steps to perpetuate these laws, and the trained disaster and emergency forces, which served so well during the war.

We wonder, had that been done, if Governor Hildreth of Maine would have had to broadcast his urgent appeal to resurrect civilian defense.

The other thing that gives for thought is this: we wonder if when the New England major disaster program, whatever its title, is all signed, sealed and delivered, just how prominent a part the municipal, township, private and state fire protection forces will have in the scheme of things!

Potential Disasters The recent department store fire at Christchurch, New Zealand, at which over forty lives were lost, lends emphasis to the potential fire hazards of this type of establishment. Especially around the Christmas season, when shoppers crowd these department stores, the hazard is most acute.

That there have been so comparatively few fires in such stores in recent years speaks volumes for the efforts of the fire service in fire prevention. The point that must be stressed, however, is that there can be no relaxation of these efforts. Frequent inspections by qualified fire department officers, enforcement of fire prevention regulations, and proper maintenance of fire protection facilities are vital to the safety of these institutions.

Faithful attention to these matters is the price of safety.

Merry Christmas! In these times of international wrangling, rancor and discord, Christmas provides a happy interlude. As so aptly stated by John Greenleaf Whittier:

> Blow, bugles of battle, the marches of peace;
> East, west, north, and south let the long quarrel cease;
> Sing the song of great joy that the angels began,
> Sing the glory of God and of good-will to man!

And may we, on this occasion, extend to our friends our sincerest wish for a truly happy Christmas, to be followed by a new year of health, security and contentment.

Fred Sheppard

Preventing Fires Involving Petroleum Products

By GEORGE F. PRUSSING*

THE first principle of fire protection for oils is to store them in good tanks. You should be able to tell whether or not an oil tank is properly designed and constructed. If it is, half your problems are over; if not, you should know that your secondary defense against failure lies in dikes and vents. Dikes are designed to take care of spills and overflows, as well as tank failures. Vents are designed to relieve vapors when filling and emptying tanks. But vents are also safety valves in case of exposure fires and you should know how big they should be for each type of tank and especially for tanks that don't have weak roofs.

Fuel Oil Goes Up in Smoke

This fire at Richmond, Va., terminal of the Standard Oil Company destroyed more than 35,000 gallons of fuel oil, and threatened to spread to huge nearby storage tanks

Recently at a fire at a bulk plant in the State of Washington there was some outside spread when one of the horizontal oil tanks took off like a rocket. Not long afterwards there was one like it in California. Now neither of these fires would have been serious except for the behavior of the tanks when exposed to radiant heat. As a matter of fact, the two fires were identical in this—that the tanks were not provided with proper vents.

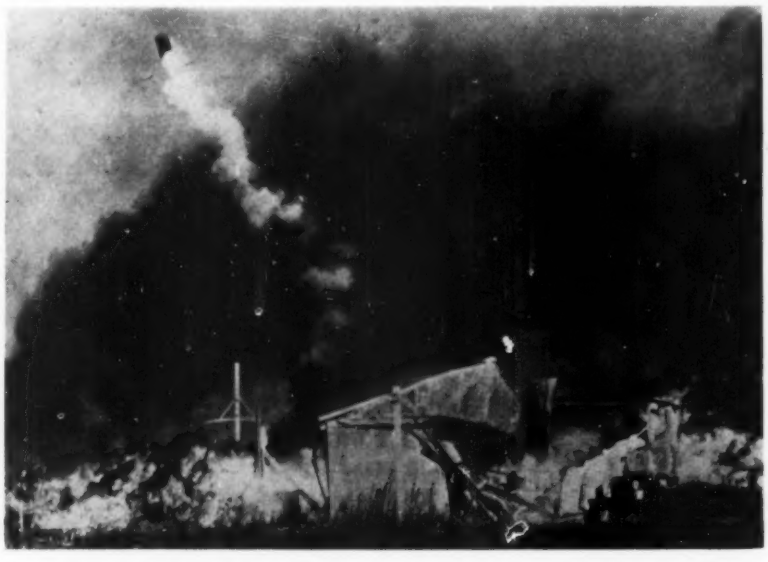
The matter of diking has always been a difficult one to understand. The basic rule is that if escaping oil can get out of the property and do damage to others, some means must be taken to keep it at home. Out in the desert or even at the edge of town, tanks need no dikes. On the edge of a stream that later flows through a city, they do. There are a variety of other conditions that may govern.

What has been the principal difficulty has been an old Underwriters' rule that said that when a dike was built it had to provide capacity for all of the oil in all of the tanks, if they were all full at the same time. That rule is fine for one tank but is absurd and unnecessary for a group of tanks. It is as unreasonable as requiring a bank to keep on hand in cash all of its deposits. Experience teaches how much money a bank must keep on hand and experience has demonstrated how much capacity a basin must have to take care of oil tanks.

Another problem of all ordinance writers has been that of tank spacing. No two engineers in the country can tell you how far from each other or how far from the nearest property line it is safe to place an oil tank. The reason is that distance is not the important or governing factor. If the tank is well designed and well built, it can be within ten feet of the property line and not endanger its neighbors. Similarly, a group of tanks standing in a single row can be three feet apart, and be reasonably safe. The problem is one of preventing oil tanks from being unduly heated in an exposure fire. Hence the spacing should be such that you can get cooling streams on them without putting your hosemen in jeopardy. The next time you are asked to approve an oil tank layout, think of it as a problem in cooling down an exposure, not as a problem in suppression. You may never have the chance of fighting an oil fire in a tank but you will have many structural fires where oil tanks are exposed. And if you do have an oil tank on fire, let it burn out. There is no fire that is so well behaved or that will cause you less real trouble.

Fire experience has taught us that there are two types of fires at marketing stations that seem to repeat. One type involves warehouses and the other loading or unloading spots for tank trucks. Now the Uniform Building Code requires fire resistive construction for oil warehouses whereas the custom of the trade has been to build them of galvanized iron on wood frames. The reason for this wide difference in point

*Technical Secretary, Western Oil and Gas Association. Excerpts from a paper presented before the annual conference of Washington State Fire Chiefs and Firemen, at Wenatchee, Wash.



Not a Jet-Propelled Bomb; Just a Burning Oil Drum Sailing Through the Air

One of the hazards of the oil establishment fire, where inflammable liquids may be found in drums, is the possibility of some of these exploding and rocketing through the air. This picture is of the Earl Oil Company plant fire at Sacramento, Cal.

of view is again experience vs. theory. In an oil storage warehouse you have cases and drums of flammable liquids, plus the usual hazards of wood cases, etc. If a fire gets going in such an occupancy, the chance of extinguishment is practically nil, even with chemicals. However, the chance of holding the fire within the four walls is about one hundred percent if you can get fog streams on it to take up the radiant heat. It has been our experience that galvanized iron exterior and roof will prevent spread into the warehouse and that a wooden frame will burn down and let you get at the burning contents better than any other combination.

As to loading and unloading spots, good engineering requires that these be so spaced that you have twenty-five feet around the vehicle being worked on. Fires start from a variety of causes and no spacing formula will prevent an occasional fire when handling gasoline into or out of a truck.

What you are concerned with is suppression and that requires that you have fighting space within which to bring up your cooling streams or fog sprays.

Another consideration is drainage. Wherever gasoline and other liquids are handled by hose there will be hose failures and occasionally an overflow. If proper drainage is designed into the layout, you will have a lot easier job when you arrive on the scene. Proper drainage means getting the spill away from surrounding structures and if possible from under the vehicle. Each plant is a separate problem, but the principle is the same in every case. Just picture to yourself that there has been an overflow or a burst hose and see where you want the spill to go. You can assume that there will be many such without any ignition but eventually one may take fire. Where do you want that fire to be, under a building or off to one side where you can handle it?

You may ask why the fire chief or fire marshal should be an oil plant designer. The answer is that more than half the plants in the country are engineered by people who know less about the job and don't have the fire chief's interest in fire prevention.

As to service stations, there is little that is new. We believe that all underground tanks should either bear the label of the Underwriters Laboratory or be built to equal standards. The size of the tank and the number at a station is not of any importance from the fire standpoint, and yet more laws have been written on that subject than any other in the oil business. Fortunately for the oil companies, they haven't limited the amount of gasoline that a station can sell in a day. Hence we have stations that have to be served by the oil truck once a day whereas in other cities once a week is often enough.

Outside of the quality of the tanks themselves there isn't much to worry about in a service station except to see that the vents are adequate and don't have screens in them. The old regulation requiring screens was based on the assumption that fire would go down a vent pipe. The Underwriters Laboratory found it wouldn't and that is also proved by all our years of experience. We do not want screens because they catch dirt and spray paint. The vent should be so free that no vapor is spilled at the fill opening to the underground tank when the tank truck makes its dump. The size should not be less than 1" pipe or if there is a long run, 1¼".

Every so often some fire chief or inspector becomes concerned about the use of open flame heaters or stoves in service station buildings. I am sure that if there were some safer way to heat these little rooms where the attendant stays between jobs, we would all welcome it. However, none has so far been presented and so we must deal with the situation realistically and not theoretically. First, let's look at the record. What actually causes fires at service stations? The combination of matches and vapors of gasoline is the greatest source of fires. Very seldom do you have fires from this cause while a car is being serviced; occasionally you have a fire when a truck is making a dump. That is when a lot of vapors are being pushed out of the underground tanks. If the vents are plugged with wire gauze or are inadequate, vapors also pour out at ground level from the fill opening into which the hose from the truck is pouring its stream of liquid. These vapors are heavy and will drift around the station yard if there is no wind. A match tossed on the ground will of course cause a fire. But if the driver is at his proper post and not in the station building or wandering around, he can stop such a fire at once by simply turning off the valve on his truck. Some fires have occurred at the vents on the sides of buildings when vapors pouring out during a filling operation have been lighted by smokers coming out of the rest rooms. But so far as we know, there have been no such fires started by heaters in stations. There have been inside fires caused by heaters when attendants have used or dispensed gasoline inside the station office.

Exploding Oil Drum Leaves a Fiery Path Across Smoke-Filled Sky During Spectacular Fire at Toledo, Ohio, Which Destroyed Two Warehouses and Damaged Two Others of the Hickok Oil Corp.

Gasoline Blaze Gives Firemen Tough Battle

Torrid blaze that destroyed 350,000 gallons of gasoline gave Cleveland, Ohio, fire fighters a hard fight. View shows firemen covering exposures with fireboat and land company streams.

Where Gasoline Is Transported by Trucks, There Will Be Fires

Here is shown a trailer-tractor gasoline tank truck after it uncoupled and overturned on a highway near Watertown, N. Y. Flowing gasoline carried fire down the highway.

So, our best advice is, keep gasoline out of the office and let the boys have their heaters. If they cause no more fires in the future than they have in the past, there is nothing to worry about.

Liquefied Petroleum Gases

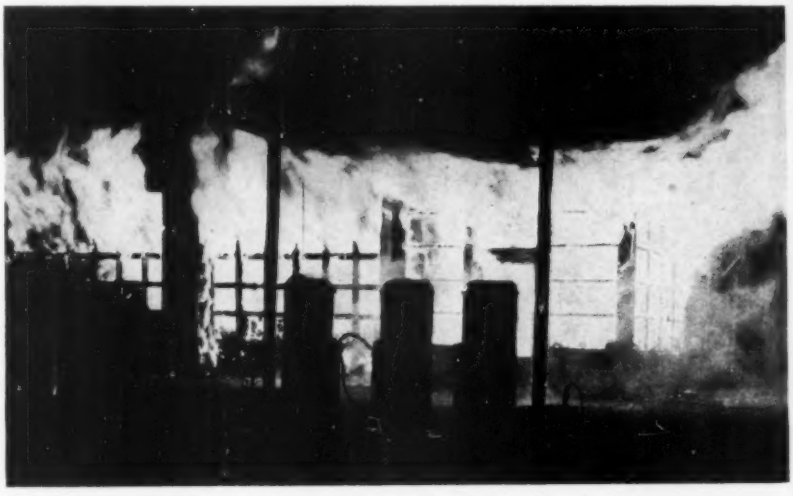
If you were to look at the definition of a flammable liquid in almost any code, you would find that it included butane and propane and yet you could not apply the code to these gases. The new code will be better worded, as the liquefied petroleum gases (which we call *LPG* for short) now have a code of their own.

Some cities have adopted by reference or otherwise the National Board pamphlet No. 58 for the regulation of LPG. That pamphlet was first put out many years ago, when these gases first came on the market and it was the best information available at the time. Now it is as out of date as any other piece of old machinery in this fast moving age. For that reason it has been completely revised and reissued under the same number but dated the first of this year. The new edition is the best regulation available at this time and anyone who is using the old pamphlet should immediately throw it out in favor of the new one. It is not an ordinance but can be used by reference as a standard for design, construction and operation of LPG installations. Already many states have adopted it.

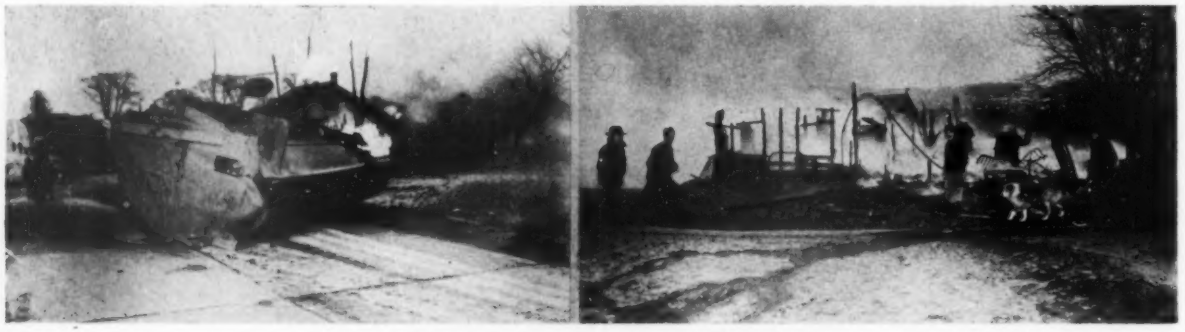
The main difficulty that we have experienced with LPG has been with the people who handle it. Few of them are well trained in handling hazardous commodities and yet they presume to handle the most dangerous material on the market today. Actually, more damage is done by the misuse of LPG every day than by dynamite and yet few states or cities require any certificate of competence on the part of installers or handlers. We believe that a state act administered by the State Fire Marshal and backed up by the fire prevention bureaus of the cities is the only way to control the situation. In California the Industrial Accident Commission has tried to handle it and has made a complete failure of it because they think in terms of pressure vessels and not of fire. Actually, very few LPG tanks fail; it is people who fail in handling LPG. Hence only fire prevention men who know how to deal with people can ever control this type of hazard.

I have in the past years investigated many LPG fires. All the serious ones resulted from the escape by accident of large volumes of gas which were subsequently ignited. In such a situation you can have outdoor explosions and you always have terrific heat along the ground. People caught in a vapor cloud of LPG when it ignites are always killed because the human body cannot stand three thousand degrees of heat even for an instant. Unfortunately the codes have not yet recognized the fact that it is the formation of these vapor clouds that make the greatest danger from LPG. If they did recognize this fact, you would not see signs on LPG tanks reading "Keep open flames fifty feet away." The safest thing that can be done to any LPG installation is to have a pilot light near the ground level as close as possible to the tank or place where the LPG is transferred. Then if there is a leak it will be lighted at once

(*Continued on page* 882)



Typical Service Station Fire—at Moses Lake, Washington. Dispensing Pumps Apparently Were Not Involved



Spilled Gasoline Carries Fire to Neighboring Property

Left: Overturned gasoline tractor-trailer truck near Watertown, N. Y., took fire, and the unit was demolished by the ensuing blaze. Right: Burning gasoline spread to residence along highway, and this building was levelled within a few minutes.

Some Lessons Taught by the New England Disaster

Need for Corrective Measures Indicated by Late Reports on October Forest Fires

By ROI B. WOOLLEY

Editor's note: In its November issue, Fire Engineering reviewed in as complete detail as possible, the battle with the forest fires of late October, stressing the major operations in the New England area. That account, prepared while some fires were still raging, was based on only the first preliminary reports of Fire Engineering's on-the-scene correspondents, and on data gathered by the staff.

Deliberately, the dramatic episodes of the far-flung struggle were played down in favor of the more technical fire control operations. Nor was any attempt made to progressively summarize and analyze what occurred and perhaps offer recommendations for consideration when, and if, New England states foregathered to prepare plans and programs to prevent a repetition of the disaster.

Now, this journal is privileged to bring its readers additional data which were lacking in the initial account. In so doing, its editors gratefully acknowledge the generous cooperation of contributors and correspondents too numerous to mention. Special recognition, however, is due to Chief Daniel B. Tierney, Arlington, Mass., secretary-treasurer of the International Association of Fire Chiefs, from whose report, prepared for the Association at the request of its president, Chief Frank McAuliffe, and based upon Chief Tierney's personal survey of the area, we are privileged to quote; to the Arnold-Hoffman Company, Inc., Providence, R. I., which provided pilots and plane for the aerial survey of the devastated areas by the author; to Raymond E. Rendall, Forest Commissioner, Maine Forest Service, and his assistants, who made available essential records; to Messrs. Jacobson, Edison and others of the Rhode Island Forestry Service, and to Mr. A. C. Hall, American Forestry Association.

In bringing its readers the following conclusions and recommendations, the editors emphasize that no criticism of any individual or organization in or related to the fire service is intended or implied.

THE picture of the tangible losses in the New England catastrophe is beginning to take shape, but the actual total monetary loss will never be known. It is difficult to estimate the replaceable value of fine timber, the worth of destroyed game and live stock and the cost to the public of burned-over watersheds.

Estimates of the losses in the State of Maine—the worst sufferer—vary from $25 million to $35 million. Insured losses may reach $12 million. Here are the latest figures: as furnished by the Red Cross, newspapers and underwriters for the State of Maine.

DEAD, 15; injured, 19 (scores of fire fighters required treatment).

DESTROYED: 862 homes; 267 cottages, 152 barns, 2 churches, 3 schools, 69 head of livestock, 32 small businesses, 200,000 acres of forest (exclusive of many thousand acres of other land).

HOMELESS: 5,000 after the fire; 1,825 in Red Cross shelters (Nov. 2, 1947). Dry lumber destroyed, 1,000,000 feet.

TOTAL DAMAGE, $30 million. Value of buildings destroyed, estimated at from $10 to $12 million.

LOSSES IN BAR HARBOR: Destroyed 170 homes, 70 estates, 23 guest houses and apartment garages, 46 greenhouses and garages, 4 hotels, 18,000 acres of forest. Total damage estimated at $10 million. Insurance adjustment claims are expected to exceed $5 million.

YORK COUNTY AREA PRINCIPAL LOSSES: Alfred, 19 homes; Brownfield, 130 homes, 8 public buildings; Waterboro, 122 homes, 97 cottages; Newfield, 45 homes, 10 cottages; Kennebunk-Alewives District, 16 homes; Kennebunkport, 20 homes; Cape Porpoise, 60 homes; Goose Rocks-Beachwood, 80 homes, 60 cottages; Fortunes Rocks, 50 cottages; Biddeford, 2 homes; Litman-Goodwins Mills, 79 homes, 66 cottages, 40 barns; Hollis-Clarks Mills, several structures; Dayton, 27 homes, 19 barns; Shapleigh, 18 homes; Sanford, 1 apartment house; (in addition, numerous outbuildings, fences, utility poles, etc.).

Estimated loss in the State of New Hampshire, second heaviest sufferer, is $2 million (insured loss, approximately $500,000) with no dead but two injured (in addition to many minor casualties). The most serious fires were reported at Rochester, Sunapee, Sandwich and Effingham. Destroyed: 40 homes, 32 cottages, also barns and numerous miscellaneous structures and out-buildings.

Damage in the State of Vermont is estimated at $15,000 from fires in Granby, Moretown and Montpelier, which burned over 3,000 acres and destroyed one farm, together with some miscellaneous structures.

Rhode Island reported approximately 600 acres burned over, with no appreciable building losses.

Although total loss figures are as yet incomplete in Massachusetts, about 100 fires were reported during the period, the largest of which occurred in Middlesex Falls, Medford, Reading, The Berkshires, Falmouth, Gloucester, Fitchburg and Malden. Most of these fires were in brush and grass and few dwellings or other buildings were burned. The fire of longest duration in the State was said to be that fought by the Fitchburg Fire Department and volunteers. Actual sustained fire fighting operations totaled 275 hours, according to Fire Chief Ernest Caouette. Loss on this fire alone is estimated at upward of $500,000.

Undoubtedly the greatest contributing

Evergreens Make Hot Fires to Handle

Back-Pack Units Going Into Operation at Forest Fire

factor to the forest and field fires was the weather. The reports of fires in all the New England states, from early in October until the rains of November, is reference to the unprecedented drought, which dried up swamps, bogs, streams and wells, made ground cover, slash and forest growth ripe for the spark of ignition, and the shifting winds which gave wings to the fires.

Not a few accounts speak of "winds of gale force" . . . of "sudden changes in the wind" . . . and the like. But there exists no available weather records to support these statements.

Actually, the official Weather Bureau records for the month of October in the Portland, Maine, area show the highest wind velocity reached was 27 miles per hour (NW, on Oct. 27). However, there is every reason to believe that in many sections the fires created their own swift-moving, hot-air currents, as so many conflagrations do. Therefore, Weather Bureau statistics for any given area, no matter how accurate, cannot be accepted as indicative of winds for other areas. The "Monthly Climatological Summary" of the Portland, Me., (city airport) Weather Bureau for October summarizes October's weather in these words:

"This was a very pleasant month in most respects. Sunshine was considerably above normal, rainfall was slight and mean temperature was the highest of any October on record. A temperature of 87 on the 7th was the highest ever recorded in October. However, the deficient rainfall was a continuation of the drought which had persisted through the summer. Fires began in the overdry woods of southern Maine early in the month, reaching their peak between the 20th and the 28th. Rain on the 29th allowed the fires to be generally brought under control. Surface water levels in many sections were the lowest on record. . . ."

If the New England holocausts taught anything, it is that forest and field fire control must take into consideration the weather—at least the factors of temperaures, precipitation, wind and humidity. It must recognize the fact that too much dependence cannot be placed on over-all official weather reports especially as concerns direction and strength of wind; that large open fires create their own "gales," and that many factors, such as amount and extent of burnable material, terrain, wind and other breaks, influence both wind velocity and its direction.

Sifting the evidence of impartial observers, and those who fought the fires during the trying October days, leads inescapably to definite conclusions; these in turn, by simple reasoning, suggest certain remedies and recommendations, if the catastrophe is not to be repeated.

The following conclusions and recommendations are offered in a constructive sense, and not in any spirit of criticism of any individual or organization. They are not submitted in the order of their importance.

1) Preparedness: The states had ample warning of the impending disastrous fires. The U. S. Weather Bureau reports and the notifications to state forestry and other department heads by field men of the hazardous situation left no room for doubt. Some local fire officers issued public warnings for their areas and when the situation was critical, some states published warnings and in some cases alerted their game, forestry and conservation forces.

Other than this, little action was taken to prepare until it was too late. Orders closing the woods were tardy, according to many observers. In one eastern state at least, the order when promulgated was so ambiguous and indefinite that the regulations were little understood, and less obeyed. Fire patrols were not generally intensified, until most of the damage was done. No special alert was given the fire services. Reserve and spare fire fighting equipment was not made ready on any broad scale. In the words of Maine's Governor Horace A. Hildreth: ". . . it is rather obvious that neither in this state nor, to the best of my knowledge, any other state, is there any adequate civilian emergency organization . . ." He might have added that nowhere in New England does there exist disaster preparedness plans or programs on a scale to cope with the situation that ultimately developed.

These conclusions point to their own remedies. Obviously, there should be both short and long-range preparedness plans to meet potential major fires or other disasters. Obviously, too, such plans should start at the local level but they should also anticipate destruction on a scale even beyond the state level.

Following a meeting of state representatives, on January 13 next, a program to meet major disasters will be prepared and submitted to the several state governors for approval and adoption. Many hope that this will include the good points of the plan to fight forest fires submitted a year ago by the Conference of Fire Officials and sponsored by the New England Council. Certainly the fire service of New England should occupy a top position in any such program.

2) Coordination. Some observers have attributed the confusion and lack of command, that were reported—two evil handmaidens of almost every major catastrophe—to lack of coordination of effort, and blame it, in Maine at least, on the failure of municipal and community fire forces to team-up with the state's forestry and other services. They attribute the situation to Maine's "town protection system." In that state the townships are responsible for exinguishing fires in their own territory, but fires are no respecter of township or other boundaries. Conflagrations may involve both townships and wild life areas, the state being responsible for the latter's protection. State and municipal fire protection forces may become inextricably intermingled, with resultant confusion of authority and command. That is what happened in New England. It was not so noticeable where municipal fire forces worked together on a mutual aid basis, as in Massachusetts, but where representatives of the military or of the state services were rushed to a distant and unfamiliar area with little or no advance knowledge of the terrain, property at risk, the fire fighting facilities, the communications and the "politics" of the area, confusion and conflict were bound to occur.

Within the state level the responsibility for coordination naturally rests with the governor, or head of the state government. But where, as in war, or disaster such as the great hurricane, or October holocausts, the emergency transcends state levels there must be a coordinator of coordinators, a general of the forces. In some states there is an effort to vest this authority in the military, in peacetime as well as wartime. If the experience of New England is any criteria in meeting peacetime emergencies, at least during the early and critical stages, command and coordination should be based upon predetermined authority or authorities. Federal agencies, including the armed forces, or the American Red Cross, may and doubtless should take over certain functions and responsibilities, but should not attempt to run the show, many believe.

3) Mutual Aid: The disaster was convincing evidence of the importance of well-planned, well-organized and well-administered mutual aid. In sections of New England, mutual aid has been in successful operation between municipal fire services for years. In others, it is unknown. The October fires demonstrated both its advantages and its limitations, as presently practiced.

Whole communities were saved in Massachusetts by the operations of fire forces on a reciprocal basis. Mutual aid functioned best, it is indicated, where there was a central headquarters and authority that moved men and apparatus around to meet emergencies as they arose, and maintained protection over threatened areas, coordinating aerial and ground observation with forces in the field and in reserve

On the other hand, a major essential in efficient mutual aid was noticeably

lacking in the New England debacle. There was no complete, up-to-the-minute inventory of fire fighting equipment available throughout the entire area, which could be mobilized or drawn upon as needed.

With the examples of systematic mutual aid as practiced in parts of Massachusetts before it, the group which is to prepare the New England disaster program should find ready material for its guidance. State-wide mutual aid, in which community and municipal fire departments cooperate with state conservation and forestry services, is practiced extensively in California and other states. New England may well follow the same pattern.

4) COMMUNICATIONS: A contributor to the confusion and lack of coordination that existed in some sections was the lack of adequate commuications. Wire service early failed as poles burned away, or community telephone operators were forced from their posts. Radio was the main reliance of fire fighters as long as there was power; however, it was not available on the fire ground to satisfactory degree. Some walkie-talkie radios were used during the Maine fires. The Navy brought in radio hookups and in Maine the State Police, which Commissioner Rendall termed his "eyes and ears," were of great help. But there was no organized, systematic use of short-wave radio except in isolated instances, such as at Rochester, N. H., where aeroplane spotters were in constant touch by radiotelephone with the control system in the Central Fire Station.

In Maine, there are four supervisors who have two-way radio in their cars. They are in communication with fire control towers, but there is no radio transmitter or receiver in the headquarters of the State Forestry Service. Nor is there any radio hookup between the fire services of the towns of the state. The excellent work of the State Police, particularly out of the Wells Barracks, deserves recognition.

Water Supply Is the Major Problem at Forest Fires. Here Forest Wardens Fill Extinguishers and Other Containers from Drums on Wagon

Of conflicting value, however, was the use of commercial broadcast stations in the emergency. It was gratifying that New England radio stations told the nation of the disaster and that Governor Hildreth's air appeals for help met with quick response, but the same public broadcasting that informed the nation and set the relief machinery in motion undoubtedly contributed to the mass movement of curiosity seekers and spectators, which in places slowed operations of emergency services, set up traffic jams, overloaded communications facilities, and brought unwanted and unneeded assistance.

Doubtless New England's final disaster plans will take into consideration the potentialities for good, and for harm in commercial broadcasting and will set up disaster information, and public relations machinery to make most effective use of radio's advantages for mass-education and instruction.

At the same time, the evidence indicates that state conservation and forestry forces should possess their own radio communication facilities, independent of police and/or fire services. On recommendation of the Radio Technical Planning Board, the Federal Communications Commission has made available radio frequencies for such services as well as for mutual aid hookups between towns and fire districts. There no longer exists any valid reason why the full benefits of short-wave radiotelephone communications should not be enjoyed by every state.

5) LEGAL FACTORS (LAWS AND ORDINANCES): It is said, some of the confusion that existed in certain sections throughout the period of crisis may be laid at the door of the laws and ordinances (or lack of them) governing fire safety, conservation, and protection of fire fighters. Forest fire control legislation has been notoriously lacking in many ways. Local ordinances to supplement state laws, too, are missing in many localities or, where found, are out-of-date.

It is evident that legislation relating to fire safety in forest and field is due for overhauling and re-evaluation.

6) MANPOWER: In many areas there was noticeable shortage of manpower for efficient fire fighting. The shortage grew acute as men on the fire lines became exhausted and had to be relieved. In some instances the necessary withdrawal of men from key positions, due to fatigue, permitted the fires to get out of control.

In other localities there were plenty of men at fire headquarters, or mobilization points but few on the fire-lines. The problem was to dispatch and employ available personnel to best advantage.

Lack of manpower is given as one excuse for failure to maintain night fire lines and patrols. Night operations are generally more hazardous and trying than day fire fighting, but many students believe they are more successful.

There was a shortage, also, of skilled fire fighters. As the fires spread beyond

(*Continued on page 882*)

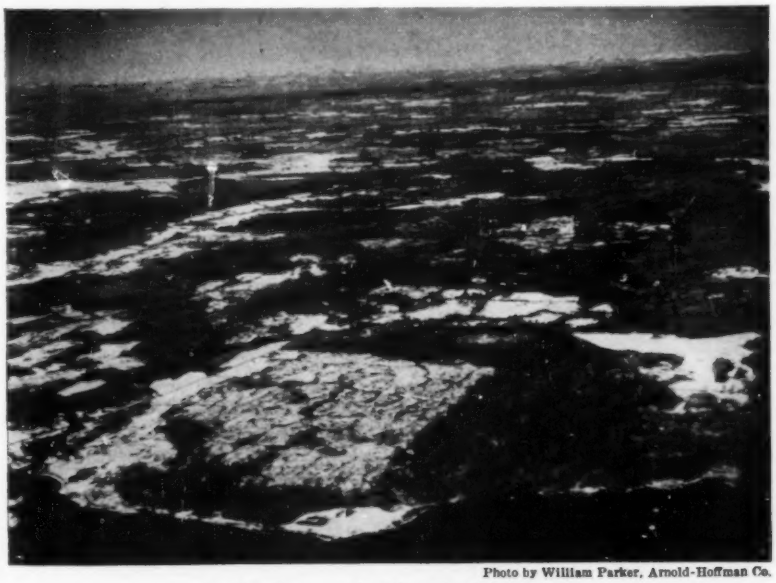


Photo by William Parker, Arnold-Hoffman Co.

Looking Down on the Glory That Was Maine

This aerial view, taken at about 1,000 feet over the burned Kennebunk-Biddeford area looking inland, from the ocean, shows the White Mountains in the distance. Snow fails to hide some of the thousands of square miles of devastation.

PROVIDENCE ALMOST REPEATS THE COCOANUT GROVE DISASTER

Thirty-nine Injured When Over 400 Flee Steak House and Bowling Alley Fire

A Staff Account*

GHASTLY tragedy, reminiscent of the Cocoanut Grove holocaust, was narrowly averted on the night of November 13, when a five-alarm fire roared through the huge Rhode Island Recreation Center, 1300 North Main Street, Providence, and damaged adjoining property with total loss of $600,000. Thirty-nine men and women diners, bowlers and spectators received injuries of varying degree in the stampede to escape the rushing flames. Most of those injured made the old mistake of delaying to collect their wraps from cloakrooms.

Just as some of the lessons learned from the Cocoanut Grove tragedy doubtless prevented a major catastrophe, so lessons learned from early conflagrations due to wooden shingles, unquestionably prevented extension of the blaze into the heavily built up frame residential section of the city.

Formerly a Car Barn

The sprawling, one-story brick building, about 150 x 120 feet together with the A. & P. Super Market and storage building, which measure about 70 x 150 feet, occupy an entire city block lying between North Main Street and Nahant Street at Tenth Street, about 1200 feet from the Pawtucket boundary.

Originally a car barn, the structure was converted into a recreation center, housing Rhode Island's largest bowling alley, with forty-two alleys, and Sullivan's Steak House. The A. & P. Stores, at 1320 North Main Street, and the Recreation Liquor Store, which separates the supermarket from the Steak House, were added later. Together with the Recreation Center, the liquor store was razed, but firemen by hard work managed to prevent total destruction of the A. & P. property.

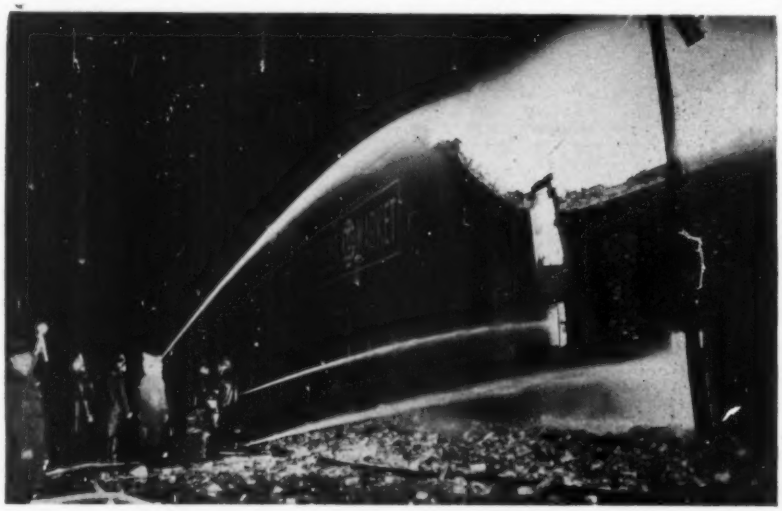
Fortunately, there were no hazardous exposures, but directly across wide North Main Street to the east, is a large restaurant, and behind this on a steep grade, several blocks of frame dwellings and other occupancies. After fire broke through the roof of the Recreation Center, this area was showered with burning brands and sparks, driven by a strong, northwest wind. Had fire extended into this district, firemen would have been practically powerless to attack it quickly because of the traffic-jammed streets. As it was, the non-combustible roofs saved the day.

Exits Called Adequate

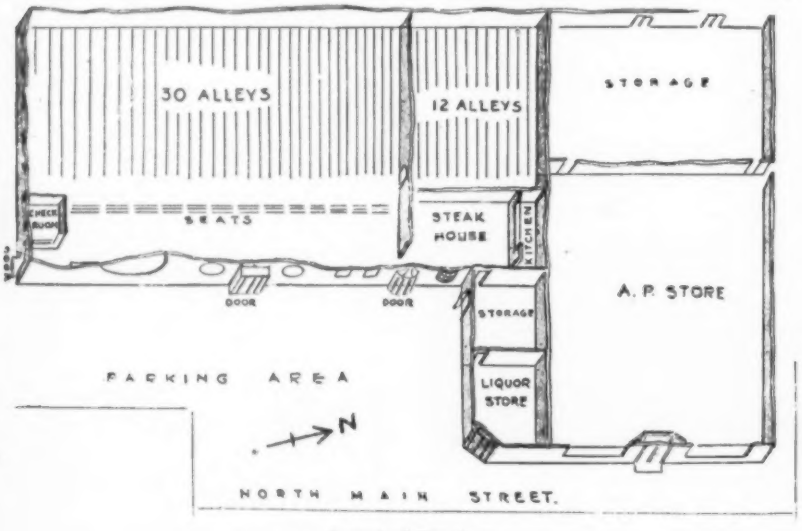
At the time of the fire, there were about thirty patrons and a reduced force of employees in the Steak House, while the Recreation Center was occupied by about 400 bowlers, spectators and employes. It is considered a miracle by some that these occupants all escaped.

According to Building Inspector Alexander A. Addeo, the main exits from the Steak House and Center were adequate to meet all safety requirements. One large exit led directly from the Center onto the large parking area facing North Main Street; a smaller exit, led from the coatroom into Tenth Street at the southeastern corner of the center. It was here that the greatest confusion occurred. Double doors at the coat room entrance opened inward, but were unlocked, and an attendant was said to be "always in the coat room, to open them in case of need." Addeo estimated that between 50 and 100 persons left through these doors. Seven small windows in the southern wall on Tenth Street were all barred, while most of the larger windows fronting North Main were inaccessible as emergency exits. Two single doors at the rear of the building, one at the rear of the main bowling alley room, which opened inward and the other in the rear of the Muriel room of the bowling alley, directly back of the Steak House, were not included as exits because "customers congregated at the other end of the alleys near the two main entrances". These rear doors had been installed as

(Continued on page 885)



Thirty-nine Were Injured When a Fire Swept the Rhode Island Recreation Center in Providence, November 13. The Fire Started in an Adjoining Restaurant. Firemen Are Shown Playing Streams of Water on the Fire.



Layout of Fire Area

* This account is prepared from observations made by a member of Fire Engineering's editorial staff who was an eye witness, and from data supplied by Chief Thomas Cotter, Providence Fire Department.

TESTS GIVE FURTHER DATA ON EFFECTS OF WETTING AGENTS

Demonstrations Staged at University of Maryland Contribute Additional Information on the use of Water Wetters

A Staff Report

IN an effort to further develop the comparative value of water treated with a surface tension reducing agent, and plain water, on different types of fires, a number of experimental tests were conducted November 16, 1947 at the Fire Service Building College of Engineering, Fire Service Extension of the University of Maryland, College Park, Md.

Cooperating with the University's Fire College was the Carbide and Carbon Chemicals Corporation, manufacturers of various penetrants, wetting agents and detergents and the Fire Departments of Riverdale, Hyattsville, Glen Echo and College Park, Maryland. Witnessing the experiments were members of the Armed Forces and the Fire Service of the area.

The operations, which occupied a full day, were directed by Chief James W. Just, Director of Fire Service Extension, assisted by Mr. Hugh McNair, Engineer, with the Carbide and Carbon Chemicals Corporation, members of the Staff of the Fire College and cooperating fire departments. The timers were Commander Phillips, U. S. Coast Guard and Irving Johnson, Maryland State Firemen's Association. Chief Roi B. Woolley, Assistant Editor of FIRE ENGINEERING served as Judge.

Used in the different tests were Riverdale's 500 GPM Mack pumper, with 300 ft. of ¾-inch booster hose and Navy-type fog nozzle. At 150 PSI pump pressure, this booster line discharged 22 GPM. Using 1½-in. double jacket, cotton rubber lined hose and Navy-type fog nozzle, the discharge was 38 GPM; College Park's Dodge truck equipped with front-mount Barton, 500 GPM pump. Using 200-ft. of 1-in. booster hose at 100 PSI pump pressure, the discharge was 22 GPM, and with 1½-in. double jacket cotton, rubber lined hose, at 110 PSI pump pressure, the discharge was 38 GPM.

The major objective of the tests was to determine the effectiveness of a commercial wetting agent, such as is now being used by the fire service, on typical Class A and Class B fires. The particular wetting agent employed in the tests is said to combine the necessary characteristics of penetrant, surface wetter and detergent suitable for general fire department use.*

Although conditions did not permit the application of all three types of wetting agents on each different class of fires in the experiments, the use of the single wetting agent, which was selected as the type most suitable for the particular clases of fires used in the experiments was considered to have demonstrated the efficacy of wetting agents possessing its characteristics.

Following the trials, it was generally agreed both by those who conducted them, and those who observed them, that: (1) water treated with a commercially acceptable wetting agent (wet water) does a better job of extinguishing certain types of Class A and Class B fires than plain water, similiarly applied; (2) use of such a wetting agent by a standard fire department pumper, either through its booster tank and hose, or where the booster tank is bypassed by means of a proportioner, is practicable and requires no special changes or adjustments either in the apparatus, hose or fog nozzles**; (3) the effective use of treated water depends to no small degree upon the skill of the operator, both at the pump and at the nozzle. As in the use of foam and all other types of extinguishing agents, the application of treated water in extinguishing a particular fire calls for a proper technique which can be achieved only through training and experimentation, and: (4) practical "burning" tests such as those at the University are the best means of acquiring this necessary technique—short of actual use of wetting agents in day-by-day fire department operations.

Elaborating on conclusion (1) the tests indicated several distinctive advantages for the treated water as compared with the natural product. Not all of these advantages were noticeable in any single test-fire or extinguishing operation. In some experiments a number of advantages were apparent. In others, they were not so numerous. Summed-up, the tests indicated that treated water did a better job of extinguishment for these reasons: (a) less time is required to control the average fire using treated water; (b) there appears to be quicker conversion to steam, with corresponding increase in absorption of BTU's where treated water is used on hot fires; (c) there is noticeably greater penetration of the impregnated water whether used as fog or straight stream; (d) firemen advancing behind water-fog report taking less punishment from the fire when using treated water; (e) there is manifestly less run-off, using treated water, even though the period of stream operation is less—which would indicate less water damage to property; (f) there is appreciably less overhauling required when using treated water — which should mean operating time saved, quicker return to quarters, and lower overhaul damage.

Nine of Twelve Tests Recorded

Twelve experiments using wetting agents were conducted, only nine of which were officially recorded, three being considered inconclusive, for one reason or another. One of these, however, illustrated the need for having all factors in comparative tests of given equality.

The test in question included the extinguishment of two mattresses, both of which were primed with the same amount of kerosene; ignited in the same manner, and attacked with identical portable extinguishers, one using treated water, the other plain water. Both mattresses were supposed to be alike

(*Continued on page* 887)

Two Sheds on Which Tests Were Conducted to Show Effectiveness of "Wet Water"

* Penetrants are those wetting agents effecting a high degree of penetration. Surface wetters are those wetting agents that produce very low surface tension and consequently cause the solutions to spread over a large surface area. Detergents have a pronounced cleansing action and greater tendency to foam. All wetting agents being marketed to the fire service have all these characteristics to a greater or less degree. It is the object both of the manufacturers of such products and the fire service to develop a wetting agent that will be universally adaptable for the majority of normal fires and fire department operations, without requiring changes or adjustments in fire fighting equipment, such as pumps and nozzles, in order to successfully adapt the treated water (water containing the proper proportion of wetting agent) to the particular fire extinguishing problem facing the fire fighters.

** Many fire officers have the erroneous idea that to employ treated or "wet" water requires special equipment. This is not the case. It is true, however, that for most effective and economical application fog nozzles are advisable. Most efficient use, also, is possible where a simple proportioner insures the mixture of the right percentage of wetting agent in the hose stream and eliminates the need of pre-mixing in booster or other tank. As the technique of the application of wet water improves, so will broader use of this modern extinguishing agent. Already used in small, straight streams, treated water may eventually find application in heavier streams and larger hose.

HOW EAST WINDSOR HOSPITAL PRESCRIBES FIRE PROTECTION!

Patients Guarded Against Danger of Fire by Modern Equipment and Methods

By M. W. Bowman

WHEN Windsor Fire Chief Clarence DeFields, one of the most capable chiefs in the country, finished making a periodic inspection of East Windsor Hospital, Windsor, Ontario, he told Dr. P. J. G. Morgan, medical superintendent, "this hospital is extraordinarily well protected against fire. I can't think of a thing that has been missed".

High praise indeed from a professional fire-fighter. But praise is nothing new to Dr. Morgan. In his fourteen years as medical supervisor of this institution for the chronically ill he has laboured so whole-heartedly for the welfare of his patients that East Windsor is famed across Canada as a model of its type.

But of the numerous benefits brought to patients, many of them unusual, any objective view of Dr. Morgan's work discloses that fire prevention and fire-fighting tactics are predominant. While Dr. Morgan is thoroughly informed on all aspects of his work he is particularly keen on keeping fire away from his patients and their hospital. No similar group of aged patients, average age 67, enjoys better protection against fire anywhere.

"Why?" he will enquire. "Patients in the hospital at the best of times are more at the mercy of fire than the normal ambulant human being. But I don't know what would happen in case of fire to my patients without ample fire-protection. Most of them are very old, many scarcely able to walk and, because of their age, would become confused easily."

The Morgan formula for preventing or fighting fire falls into two natural divisions; the mechanical and the human. Both are emphasized in this hospital; not just once in a while, but as a continuing process.

Off-hand, the danger of fire in East Windsor hospital would appear to be greater than normal in such an institution. For this is a hospital where smoking, and lots of it, is done every and all hours except sleeping periods. Tobacco is a mainstay and a pleasure for old people, Dr. Morgan feels, so smoke they do . . . much of it tobacco donated by kindly citizens. Despite this, East Windsor has had no major fires.

Fire prevention starts in the wards themselves. Every ward is equipped with steel containers holding paper and other refuse. Recognizing that smouldering tobacco ash dumped into these, as is frequently done, invites fire, Dr. Morgan has attached steel springs to the lids of these containers which keeps them closed, preventing ingress of air.

Should fire break out in these receptacles all nurses and other staff members have been instructed in proper procedures. It is impressed on them that the lid is not to be thrown open, but merely raised sufficiently to insert the nozzle of a fire extinguisher.

East Windsor has segregated each ward by using six fire-doors which operate automatically. Thus fire breaking out in any one ward is isolated.

There are nine utility rooms on the ward floors of East Windsor hospital. Opposite each of these rooms a fire-station has been placed. Every nurse and every staff member knows where these stations are. Each of these stations is equipped with a variety of equipment for effective "first aid" fire fighting.

There are two sizes of fire-extinguishers, a large one and a small one. It is the nurse's job to use one of these. Should the large one prove too heavy to handle, it is her duty to call the engineer or janitor to come and help her.

All nurses in this hospital are taught the proper method of operating these extinguishers. The new nurse is instructed the first or second day after being hired. Neither old nor new nurses are allowed to forget.

Every day Dr. Morgan, on his rounds, makes a practice to stop a nurse, any nurse, and say, "now what would you do in case fire broke out? How would you work one of these extinguishers?" When the nurse starts to explain Dr. Morgan says, "Don't tell me. Show me."

All nurses in this hospital are fire-extinguisher conscious. So are the male members of the staff. Further, all extinguishers operate in this hospital because they are carefully inspected.

Each fire-station in the hospital is equipped with a public address system loudspeaker and with a telephone connecting directly to the front-office switchboard. There is also an alarm which connects directly into city fire department headquarters.

In the event of fire, the nurse jerks the lever sounding the signal in the fire department, following which an announcement is made both over the loudspeaker and the telephone to the front office. Thus three alarms are given on the one fire.

The dual system, PA and telephone, is used because "one of them might be out of order and we can't take this chance," said Dr. Morgan.

To be certain that the personnel knows the routine and to refresh their memories a test routine is undertaken once a month. At these times the fire department is notified that East Windsor hospital is going to hold a fire drill.

At no time is a nurse to fail to make these calls, and instantly. Chief DeFields has impressed that if firemen can get to a fire within two minutes they can lick it but if they have to wait for five minutes the fire will usually lick them and that there has been terrible and needless tragedy in many institutional fires because precious time has been wasted in calling the firemen and properly notifying them of the location of the fire.

This does not occur in East Windsor hospital where the exact location of the fire in the building is given to the fire department. Should the firemen be responding on the initial call before this information can reach them, East Windsor posts someone at the entrance way to meet firemen and direct them to the location.

Any city or any institution with a good fire record will also show a marked degree of cooperation between fire department and public. This is true of East Windsor Hospital. Inspections by firemen, either official or unofficial, are frequent. After inspection trips, the fire department writes Dr. Morgan warning of possible fire hazards. Dr. Morgan acts on these suggestions immediately. No second injunction has ever been found necessary.

In any successful fire-protection schedule the human element should always be considered. In East Windsor's case this is considered just as important as the importance of mechanical aids. Periodically a fireman or other qualified person lectures the whole staff at East Windsor; suitable demonstrations are also held. These lectures are frequently attended by patients able to do so.

Lastly, the subject of fire is kept alive in the minds of the hospital personnel. In addition to lectures, Dr. Morgan's impromptu fire-extinguisher drills, and routine fire instruction, every member of the staff receives little printed items on fire dangers in their pay envelopes.

Fire and its hazards are a continual source of interest to this hospital. Despite the great amount of smoking, East Windsor has had no serious fires of any kind; ample proof that if proper fire precautions are taken and are always in mind, fires seldom occur.

More Fire, Please!

When a second alarm is sounded because the men and apparatus answering the first alarm don't find enough fire, that's news. But Chief Allie Feldman, Denver, Colo., ran into that very situation when the department was called to an ice-house blaze October 25th.

The flame, apparently caused by a workman using a blowtorch, burned its way into the thick sawdust insulation walls of a cold storage vault. Then it was swallowed by boiling smoke clouds that sent five fire fighters to the hospital.

The windowless, nearly airless vault made a perfect smoke trap in which men could work only with self-contained breathing apparatus. Feldman and Assistant Chiefs W. S. Bryan and Robert Graeber brought eleven pieces of apparatus into the 6-hour battle against the hidden, smudge-spouting fire.

According to Feldman, the time to find and douse the blaze would have been shortened considerably if there had been enough air to support a flare-up. But the scant supply of oxygen barely kept the insulation smoldering.

In other words, there just wasn't enough fire.

WILLIAM BENDER, JR.

EMERGENCY UNIT PROVES WORTH IN NORRISTOWN FIRE DEPARTMENT

Its Use at Many Fires Saves Wear on Big Pumpers; Carries Full Complement of Equipment

NORRISTOWN, PA., citizens passing the corner of Main and Green Streets, often take a look at the shiny red emergency truck owned by Humane Fire Company, and wonder what it does when the alarm sounds off.

It does plenty—not the least of which is to save Norristown taxpayers directly and indirectly, a lot of money!

Emergency Unit of Humane Fire Company, Norristown, Pa.

In approximately 65% of the alarms Humane answered between February 3, 1945, and October 31, 1947, the emergency truck put out the fire by using its Hale FZZ Pumping unit without other aid—thus making it unnecessary to use the larger apparatus, at least one of which always responds to an alarm at the same time.

In other words, 65% of the time this unit saves wear and tear on larger apparatus, thus prolonging the latter's efficiency in fighting more serious fires.

Fire Fighting Log of Emergency Truck

Here is the actual fire-by-fire log of the pumping unit on Humane's emergency truck, from its first fire to present writing, a period of 33 months. (Note: In March 1947 the pump unit was remounted on the Humane's present 1947 International K-5 truck, specially built up to Humane's specifications for emergency service.)

Feb. 3, 1945—Used pump to fill booster tanks of large fire trucks, saving the use of the 2½" line and hookup to hydrant (pumps into tanks of large apparatus from emergency truck tank, then "ferries" back another load of water from distant hydrant or other source).

Feb. 4, 1945—Put out rubbish fire in rear of a home. No need for using large apparatus.

Feb. 14, 1945—Used to fill booster tanks of large apparatus, saving the use of the 2½" line and hookup to hydrant.

April 15, 1947—Used to put out dump fire. No large apparatus in service.

Apr. 27, 1945—Coal pile, outside combustion. No large apparatus in service.

May 30, 1945—Large tree on fire; no large apparatus in service.

June 1, 1945—Dump fire; no large apparatus in service.

Sept. 7, 1945—Second floor of garage; filled booster tanks of large trucks.

Dec. 17, 1945—Fire in third floor of home; filled booster tank of large truck.

Dec. 22, 1945—Fire in cellar; filled booster tanks of large trucks.

Feb. 2, 1946—Dump fire; no large apparatus in service.

Mar. 27, 1946—Dump fire; no large apparatus in service.

Apr. 2, 1946—Dump fire; no large apparatus in service.

Apr. 13, 1946—Dump fire; no large apparatus in service.

Feb. 2, 1946—Dump fire; no large apparatus in service.

Mar. 27, 1946—Dump fire; no large apparatus in service.

Apr. 2, 1946—Dump fire; no large apparatus in service.

Apr. 13, 1946—Dump fire; no large apparatus in service.

July 4, 1946—Dump fire; no large apparatus in service.

July 18, 1946—First floor fire; used along with large apparatus.

Mar. 14, 1947—Third floor; no large apparatus in service.

Mar. 21, 1947—Truck accident; washed fuel oil from street; no large apparatus used.

Mar. 21, 1947—Kitchen fire; no large apparatus used.

Mar. 25, 1947—Fire on roof; no large apparatus used.

Mar. 27, 1947—Field fire; no large apparatus used.

Apr. 6, 1947—Third floor fire; no large apparatus used.

Apr. 12, 1947—Ground floor, lumber; no large apparatus used.

Apr. 17, 1947—Freight car fire; no large apparatus used.

May 8, 1947—Fire in brick mixing room; no large apparatus used.

Aug. 2, 1947—Trash fire; no large apparatus used.

August 6, 1947—Trash fire; no large apparatus used.

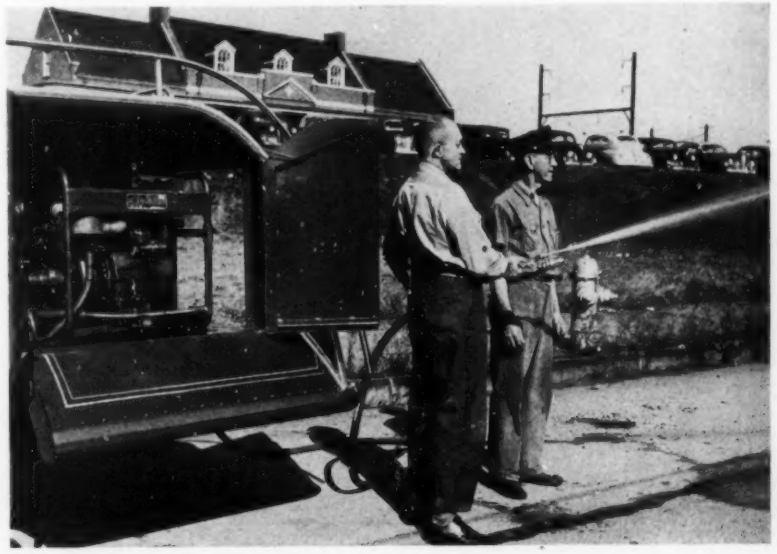
Aug. 22, 1947—Truck fire; no large apparatus used.

Aug. 25, 1947—Dump fire; no large apparatus used.

Oct. 17, 1947—First floor fire; pump in service along with large apparatus.

What the Emergency Truck Carries

In addition to its Hale FZZ portable pumping unit, Humane's emergency truck has equipment to meet practically any type of emergency from fighting a forest fire to opening a bank vault, or



Pump Mounted on Emergency Truck of Humane Fire Company Delivering Fire Stream Through Combination Nozzle

from reviving a drowning person to rescuing a cat up a tree.

The following inventory was made with the assistance of Harry Booth, one of the drivers of the apparatus. Harry Booth and John Culp alternate on duty as drivers of Humane's apparatus. They, along with driver Harold Chantry, who lives at the Fire House, keep the apparatus in the best of shape.

Equipment List

1—Hale FZZ Pumping Unit with built-in foam proportioner and carrying frame. Capacity 60 GPM at 90 lbs., to 150 GPM at 30 lbs. pump pressure.
200 ft. of ¾" hose on reel beneath body.
1—330 gallon booster tank.
1—¼" nozzle for straight stream.
1—Akron combination fog and solid stream nozzle.
2—1½ qt. carbon-tetrachloride extinguishers.
1—Homelite smoke ejector.
1—1250 Watt U.S. portable generator.
1—Extension line lamp for use with generator.
1—Reel of 150 ft. of cable for light, in 3 fifty foot lengths.
1—Pistol grip lamp.
1—Indian pump.
1—Foam pick-up tube for 1½" hose.
4—Cans of Aerofoam Solution.
1—2½ x 2½ siamese for use from hydrant.
1—Turret nozzle with 1" to 1⅜" tips.
1—Length of 2½" hose to fill tank.
1—2½" connection for filling booster tank.
2—Hydrant wrenches.
1—Y branch for 1½" hose.
1—H and H Inhalator.
1—First aid kit.
1—Pick and axe.
1—Portable cutting torch.
2—Red blinking lights.
1—Pinch bar and 1 crow bar.
1—Scott Air-Pak mask.
1—Extra bottle for mask.
1—All service mask.
1—Salvage cover 12' x 14'.
1—Claw tool.
Boots and coats for firemen and drivers.
1—Stillson wrench.
1—Monkey wrench.
100 ft. of ⅜" rope.
2—100-watt flood lamps.
1—250 watt flood lamp.
1 box Chem-Fex.
1—Federal traffic siren.
2—Spotlights.

Many times over, the Humane's emergency truck has proved its value to Norristown; and no comment would be complete without a word of praise for the foresight and practical knowledge of Norristown's Fire Chief Miles A. Riley and his assistants, in purchasing an aggregation of equipment which adds so efficiently to Noristown's fire protection.

PORTLAND, ORE., FIREMEN SUBDUE DANGEROUS FIRE IN GAS WORKS

Nearly 300 Firemen, Manning 30 Pieces of Apparatus, Prevent Possible Catastrophe

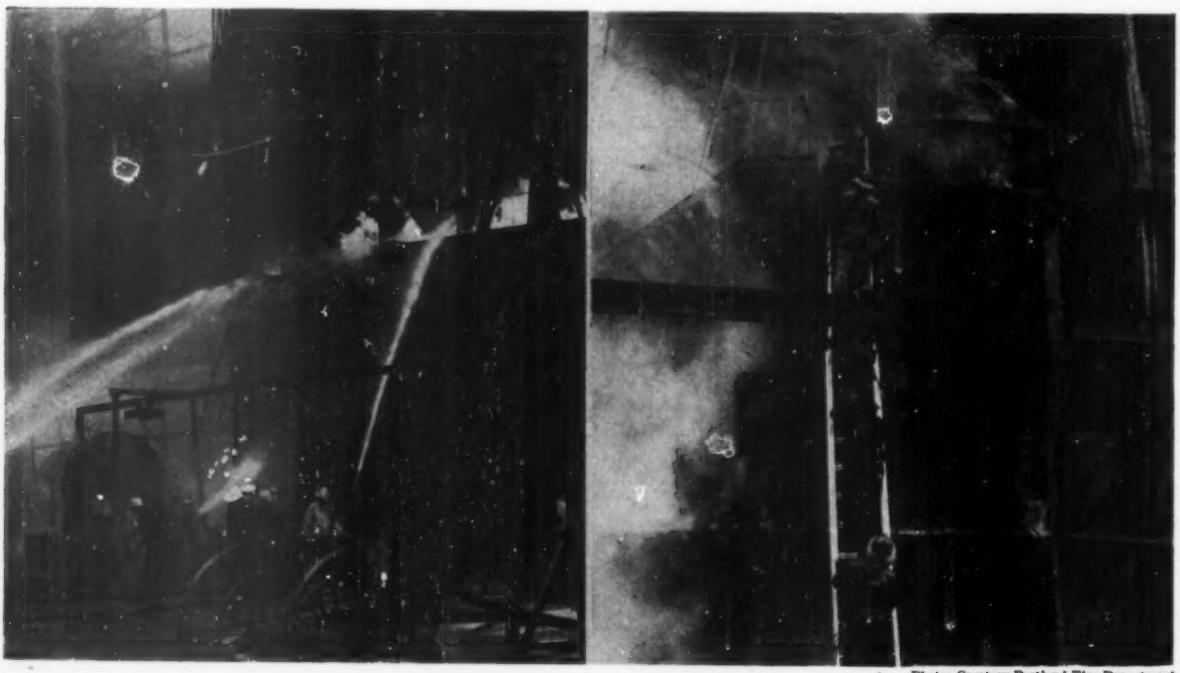
A Staff Report*

DESPITE the fact that every municipality in the nation has one or more artificial gas plants, the country has been singularly free from fires and explosions in such occupancies. The worst catastrophe in this category occurred on November 14, 1927, when a gas holder in Pittsburgh, Pa., exploded with a loss of twenty-eight lives, and extensive property damage. On March 9, 1932, a gas works explosion in Camden, N. J., killed fourteen persons. There have also been a number of cases where fires in or near large gas holders threatened disaster, but probably none of these offered such potential catastrophe as did the fire that enveloped a 100,000 cubic-foot storage tank at the Linton plant of the Portland (Ore.) Gas & Coke company late in October.

According to the report of Mr. M. E. Woodworth, Fire Marshal of the Portland Fire Department, "this fire in the Portland Gas & Coke Company plant was rather an unusual one, inasmuch as the fire involved both escaping gas and oil which covers the water seal in the tank sections. . . ." And he adds "the fire posed a considerable fire fighting problem, inasmuch as it was burning around the entire tank at the telescopic section. Gas in this tank was a raw coke gas, and the gas holder next to it, twenty-five feet away, contained the completed manufactured gas."

The Portland Gas & Coke Company plant is located at Linton, on the Spokane, Portland & Seattle Railroad and N. W. St. Helens Road near the Wilamette river. The main generating plant is situated approximately 150 feet away from the tank, which was fired, and the larger retort containing the manufactured gas. At the time of the fire, the plant was undergoing major

*Prepared with the assistance of the Portland Fire Department, M. E. Woodworth, Fire Marshal.



Photos Courtesy Portland Fire Department

Left: Fire Fighting Operations with Solid Streams and Fog. Foam Lines Are Out of Sight in This Picture, as They Were Being Used from the Roof of an Adjacent Structure. In the Foreground Is Plant Hose Reel Used by Plant Fire Squad in Laying in Foam Lines from Their Own Foam System. Right: Firemen Working Their Way up to the Catwalk which Extended Around the Tank at the Seat of the Fire.

alterations and, according to the Fire Marshal Woodworth, the direct cause of the fire was the overloading of the gas holder, which resulted in the gas breaking the water seal, following which the gas was ignited by the gas fired retort at the base of the tank. The overflowing of the tank, it is said, was caused by the shutting off of a valve by one of the construction workers.

This tallies with the report of R. G. Barnett, vice-president and general manager of the company, who said that a spark from a nearby gas retort apparently ignited the oil film collected around the water seal at the base of the tank.

Gas in the tank did not ignite, but the flames fed on leakage and on barrels of by-products around the tank. Some of these barrels exploded and the heat threatened to ignite other sections of the plant. Flames at times shot upward nearly 200 feet in the air, despite the rain and the chemicals poured on the fire by firemen responding to the multiple alarms.

Twenty-five pieces of apparatus and three fireboats responded to the three alarms; the plant's 20-man fire brigade also aided the municipal fire fighters to protect exposures, which included tanks of petroleum by-products, and to subdue the fire around the tank. Nearly 300 firemen fought the blaze manning sixteen engines, four ladders and two turret trucks; two compressors, a foamite truck and a first-aid car.

Water fog, foam, dry chemicals and Carbon dioxide were all used in varying degrees to bring the stubborn fire under control, while water streams were played on surrounding tanks to prevent extension of the fire.

Monetary damage was estimated at $50,000 but plant officials said that despite the fact that part of the framework supporting the tank buckled by the heat, the tank itself was uninjured and would be back in service within twenty-four hours. The fire did not affect the company's output or main storage facilities.

The fire was reported extinguished in two hours.

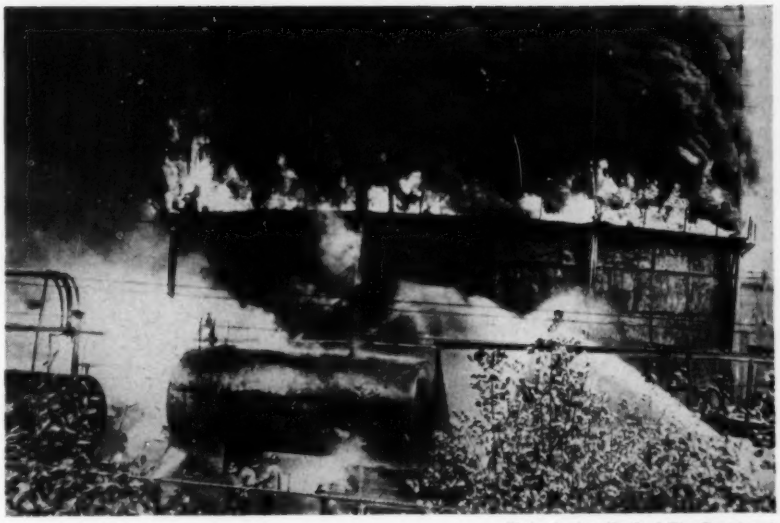


Photo Courtesy Portland Fire Department

Cooling Down Operations and Extinguishment of the Fire at the Base of the Tank, Before Lines Were Able to Fight the Main Fire.

Alameda Dedicates New Drill Tower

The City of Alameda officially dedicated its new fire department drill tower Saturday, October 11, 1947, with appropriate ceremonies, in which city officials joined with the public in acclaiming the improvement and admiring the exhibition staged by the Fire Department, under Chief Thomas M. Lane.

Alameda, which has grown from 37,000 population to 90,000 in the past few years has long needed a suitable structure for training. Now, under the persistent efforts of Chief Lane and his co-workers, the department has it.

The four-story fire drill tower is of steel and wood construction, 50 ft. high, the lower floor measuring 20 x 35 ft. (which will house the pumper used for training purposes). The foundation is securely anchored by 30-ft piling and concrete. Construction permits the lower floor being used for smoke mask training. The tower is complete with plumbing and shower fixtures for the convenience of personnel. The outside east wall is provided with wings, which fold into the building on hinges, providing a handball court for warming up exercise. Furnishings of the lower floor include lighting, fire alarm and hot water facilities.

Stairways of standard tread lead to the upper three floors. These floors measure 20 ft. x 20 ft. and, with the exception of the second floor, are unfurnished. A 3-ft. 6-in. square hole is provided for each floor in a corner, to facilitate hose drying. Protective covers are provided to guard window frames from damage by pompier ladders and the east side of the building has a standard fire escape and dry standpipe. A steel arm is secured on the top, south side of the tower for use in rope climbing and removing "victims".

Stretching across the full 20-ft. width of the building and outwards at ground level, for a height of 6-ft. is a rope safety net. A fire hydrant and a drafting cistern are also provided for pumping and hose operations. These and many other refinements tend to make the new structure one of the most modern of its kind in the country.

Ceremonies on the training ground included an inspection of the new structure and demonstration of the "voice alarm system"; raising of the flag by Firemen Guard of Honor; salute and pledge of allegiance to the flag and the introduction of Mayor W. J. Branscheid, who gave the welcoming address. Members of the city council were then introduced and Chief Tom Lane gave the official response in the name of the fire department. A special address was given by Chief Jay Stevens, Assistant Manager, National Board of Fire Underwriters, and Secretary of the Pacific Coast Association of Fire Chiefs, following which members of the fire department executed a dozen drill tower evolutions.

Wetting Agents in Fire Service

Some recent articles have brought to the attention of many people that certain chemicals added to water result in breaking down the surface tension of the water, thus making it a "wetter" liquid. These chemicals cause the outer surface or "skin" of the water to break with greater ease, and in this manner also permits the water to penetrate into objects more readily.

The principal value of water in extinguishing a fire is its cooling effect. Cooling is obtained largely by absorbing heat from the burning material, and the major part of this takes place when the liquid is turned into steam vapor. The mass of water that actually contacts the burning material is what really counts, and wetness usually increases this area of contact, and, consequently, the rate of heat transfer. Quantity of water and ability to deliver it to the seat of the fire are two main factors in combating any major fire. The lowering of the surface tension of the water may result in a very broken stream, even with a smooth bore nozzle, and therefore it is questionable whether wet water is desirable in every type of fire fighting.

For the small fire, or the fire which smolders and bores within a quantity of combustible material, or fires where upper charred layers (presence of water repellent distillates and tarry residues) of material may reduce the penetration of water, the use of wet water will prove advantageous. It undoubtedly will be of much value in brush or grass fires, especially where there is an accumulation of "duff."

"Wetter" water, especially in connection with spray or fog nozzles, may, under proper handling, materially reduce water damage; this applies particularly to an interior fire of such a character that it can be attacked with the relatively short reach available in fog streams. The greater penetrating absorption provided by the wetting agency means less run-off on to floors and less damage to contents. Except for the increase in penetration "wet" water thas no greater extinguishing value than ordinary water.

A number of various wetting agents are now being marketed. They are organic compounds and are not all of the same formulation, thereby requiring varying concentrations for use. Before adopting any compound for this pur-

pose, a full knowledge should be obtained as to any chemical reaction which might be brought about in their use, and especially whether it is of a electro-conductive, corrosive, toxic, or oxidizing nature. A comparative evaluation of these materials under simulated fire service conditions appears to be in order, and a complete report by some well-recognized laboratory would be advisable.—NATIONAL BOARD OF FIRE UNDERWRITERS BULLETIN No. 249.

Northern California Conference

The Fall meeting of the Northern California Fire Chiefs' Association was held in Vallejo, California, November 1 and 2, with approximately 300 delegates and guests in attendance. They were greeted at the Casa de Vallejo Hotel, conference headquarters, by host Chief Meredith Smith of the East Vallejo Fire Department.

President of the Association is Chief O. S. Ball of Patterson. The Association represents 416 fire departments throughout the northern part of the state.

Officially the conference opened Saturday, November 1, when Host Chief Meredith Smith was introduced. He represents the Solana County Fire Chiefs' Association as its chairman.

The address of welcome was given by Frank O. Bell, Chairman of the Board of Supervisors; the responding address was delivered by Chief George R. Turnbull of Lakeport, Lake County. Impressive memorial services for the departed members were conducted.

Following a luncheon at the Casa de Vallejo, during which City Manager Samuel Vickers addressed the delegates, the conference reconvened to hear a discussion of the topic, "Fire Service Coordination, Mutual Aid and Disaster Preparedness," by Burton Washburn of Sacramento.

Other business subjects introduced were: "What Part Do Planning and Zoning Commission Plan in Fire Protection" by Walter Hahn, Planning Consultant for the Bay Area and "Voice Alarm System and Wire Recording of Telephone Communication" by Ray Hill.

Following reports of committees and other routine business, during which a proposal to consolidate the Association with the Southern California Fire Chiefs' Association was turned down, the delegates and guests enjoyed a banquet in the Spanish Room of the Hotel.

Sunday, November 2, saw an open forum, during which all the subjects presented the day before were discussed and reviewed. The final session included a descriptive demonstration on "The Chemistry of Fire" which was attended by more than 200 persons gathered at the East Vallejo Fire Department Training Grounds. The demonstrations were directed by C. H. Van Marter.

During the Demonstrations by the East Vallejo Fire Department at the Northern California Fire Chiefs' Conclave.

Two hundred delegates and guests to the Fall Convention of the Northern California Fire Chiefs' Association witnessed demonstrations which climaxed successful conference.

Dinner guests at the banquet included Judge J. McNamara, Crockett, Cal.; Fire Chief George Oescher, Weed, Cal.; Fire Chief Roy Colter, Taft, Cal., and Battalion Chief Frank J. Sandy, Oakland, Cal.

Among those entering into the business discussions were Chief William Meinheit of Berkeley; Battalion Chief Frank Sandy of Oakland; Chief Tom Lane of Alameda, Secretary of the Association; R. B. Rose, Emeryville, Chief of the Fire Prevention Bureau and Sergeant-at-Arms of the Association and Chief Jack Haggerty of Watsonville, Chairman of the Board of Directors and past President of the Association.

The Chambers Lodge Fire Department, Chambers Lodge, Lake Tahoe, Cal., invited the Association to hold its Spring meeting in that city through its Chief, D. H. Chambers. (Thanks VICTOR P. BARTLEY).

Officials of the Northern California Fire Chiefs' Association

Seated, left to right: Battalion Chief Frank Sandy of Oakland; Chiefs O. S. Ball of Patterson, and Chief Tom Lane of Alameda. Standing: Chiefs Louis Ledford of Palo Alto; John C. Haggerty of Watsonville; William Meinheit of Berkeley, and Bert J. Rose of Emeryville.

Fireman Meets Odd Death

Fire fighters are used to facing death in various forms, but Everett H. Young, 37, member of Engine 13, Los Angeles Fire Department, met his end in as strange and tragic a way as has been recorded in many years.

Fireman Young, driving his company apparatus was returning from a special assignment on the night of November 12, last. His way took the truck along the Arroyo Seco freeway where the road borders a fifty-foot embankment which overlooks the freeway between Bishop road and Solano avenue, Los Angeles.

It is a busy road, with reported 40,000 cars passing every six hours, and of late a favorite spot for impecunious youth who delight in taking pot-shots at passing cars with rocks, bottles and other missiles. The police had received numerous complaints of the youthful depredations in the neighborhood.

Driver Young, piloting his heavy unit along the freeway, was struck on the head by one of a number of rocks that were thrown from the top of the embankment, receiving injuries which caused his death before his fellow firemen could rush him to Georgia Receiving hospital.

His last action before losing consciousness, despite a fractured skull, averted what in all likelihood would have been serious casualties to others on the freeway. He managed to turn the heavy truck onto the side of the road after he was hit.

The victim of youthful depravity left a wife and two young children. He had been a member of the Los Angeles Fire Department since 1936 and was up for promotion. (Thanks, BOB REILLY and JERRY DALY)

Western Michigan Chiefs Organize

On October 4, twenty fire chiefs from Western Michigan met in Grand Rapids and organized the Western Michigan Fire Chiefs Association, with Frank H. Burns of Grand Rapids as President, E. H. Bandgren of Muskegon as First Vice-President, Ray Green of Traverse City as Second Vice-President and John R. Weber of East Grand Rapids

The Newark Fireboat Fleet Lurks Alongside Pier, Waiting the Appearance of the Battleship New Mexico

as Secretary-Treasurer. This new organization has grown steadily since that time and it is the aim of every member to see every chief in Western Michigan enrolled as an enthusiastic working member.

It has been felt for some time that an organization which would permit the frequent meeting together of the chiefs of this area was needed and the response of those who have already signed up indicates the wisdom of this move. The organization will meet every other month on the second Wednesday of the month.

Among the principal objectives of the organization in addition to those dealing with the "furtherance of the protection of life and property from fire" and the "improvement of the fire protection service", are the effective promotion of mutual aid arrangements between departments and the selling of the idea of fire prevention and protection to the public.

The Battle of Newark Bay

The Battle of Newark Bay is over. The tumult and the shouting is stilled. A "major conflict" between the 30,600-ton battleship New Mexico (decommissioned) and the doughty "navy" of the Newark, N. J., Fire Department has been averted by a negotiated peace, signed in Washington. Newark's Director of Safety (and "Admiral") John B. Keenan, who directed the (bloodless) battle strategy that turned back the invasion of the mellifluent waters of Newark Bay and who mobilized his department's fleet of two fireboats, the Michael P. Duffy and William J. Brennan (each of 11-tons and measuring twenty-eight feet from stub-nose to squat stern) and Mayor Vincent J. Murphy who master-minded the "campaign", have "forgiven all". The tiny red aquatic pumpers have returned to their dockside berths, with their five-man crews glad to get back to their land dormitories and soft beds. Fire Chief Charles Burnett, of Newark no longer is on the anxious seat, wondering what would happen if his department got a 'worker' while his fireboat fleet was on the far-flung "battle line".

It all came about when the government sold the historic old battleship to the Lipsett Corporation, for junking (the same concern that junked the fire-wrecked Normandie), and the corporation declared its intention of conducting its junking operations within the Newark harbor. This, according to "Admiral" Keenan, would "impede Port of New York Authority improvements designed to greatly aid national defense."

It seems there is a planned $70,000,000 improvement of the city's airport and seaport which would be jeopardized if the corporation turned part of the seaport into a junkyard.

Hence it was that when tugs started to tow the New Mexico on her last long mile—or knot—toward Newark's waterways, Mayor Murphy called on "Admiral" Keenan to hurriedly mobilize the Fire Department's diminutive marine fleet, which quickly took up patrol duties down the Bay, ready to repel the 624-foot invader mounting its battery of 13-inchers with 1¼-inch deck guns.

Amid the speculation over the legality of Mayor Murphy's ordering his "fleet" to assume battle stations to prevent the war-tired New Mexico from entering port, the Coast Guard, which had been importuned to get into the fight, sat tight, awaiting developments. These came when, following impassioned petitions to everybody of importance from President Truman down, Newark city officials took their plea and their problem to Washington—and won their case.

The old fighter and two of her sisters, the former battleships Idaho and Wyoming, will be reduced to scrap and history in the Port of Newark. But under the peace treaty, approved in Washington, the $70,000,000 Port of New York Authority improvement program will now get under way at once. There will be no lost prestige, or waterfront, or anything else by the City. Only a "bureaucratic agency" (the Navy) has lost face, according to Mayor Murphy's proclamation of victory.

Omaha Department Store Burns

Fire of undetermined origin gave Omaha, Neb., firemen, responding on three alarms, a hard battle in the freezing temperature of the early hours of November 10, 1947, and wrecked one of the city's oldest structures, the Leflang Building, with estimated loss of $500,000.

The three-story brick structure, built in 1875, located at the northwest corner of Sixteenth Street and Capitol Avenue, was mostly occupied by Maypers Department store.

According to Fire Chief Ben S. Meister, "the blaze must have been going a long time" when the first alarm was turned in at 2:18 A.M., because the basement and first floor were heavily involved when the first firemen arrived. The fire apparently started in the basement or on the first floor of Maypers store, 206 North Sixteenth. It was first

Omaha Fights Its First Serious Fire of the Winter

reported by two boys who saw smoke coming from the building.

Second and third alarms, dispatched in rapid succession, brought eleven pumpers, three aerial ladders, two rescue squads, a water tower, and all off-shift firemen to the scene.

For the first half hour, the men fought to prevent the extension of the blaze above the first floor. It was impossible to operate in the smoke and gas charged ancient building. Efforts were further handicapped by a false-ceiling over the first floor of the department store, through which the fire spread. By knocking out display windows and operating heavy streams into the ground floor, firemen for a time believed they had the blaze controlled, but by 4:00 A.M. flames had extended through the top two floors and burst through the roof, spreading both north and south of Maypers, which occupied the center section of the building.

About 5:00 A.M. a 30-foot section of the south wall of the building collapsed, under the weight of a large display sign, which stood on the roof. Chief Meister had withdrawn apparatus from the endangered walls shortly before, and concentrated efforts on preventing extension of the fire to adjoining buildings. Fifteen hose streams were used in this effort, which was successful, although Ortman's Bakery, to the north of the gutted structure, suffered severe water loss.

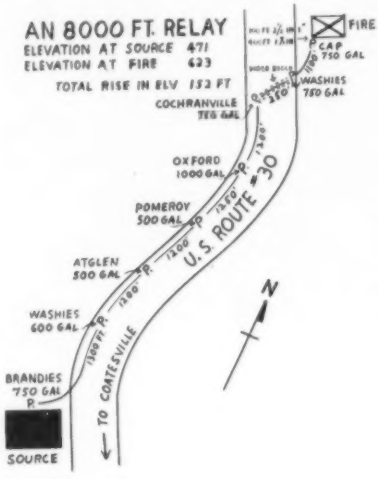
Other businesses in the Leflang Building included the Atlas Printing Company; Midwest Intertypers; Calvert Distillers Corporation; Rogers Investigation Bureau; American Citizen-Italian Press; Modern Printing Company; Art Craft Sign Company, Omaha Watch Repair Company, Atlas Sanatarium and Spotlight Liquor House.

No fire fighters or citizens were seriously injured; three occupants of the building made a safe escape.

8,000-Ft. Relay Used to Fight Airplane Hangar Fire

Pennsylvania firemen used eight pumpers in a 8,000-foot relay in a struggle to confine a fire that destroyed a large structure, formerly the old Antlers Club, a popular night spot, later converted into an airplane repair shop and office. The barn-like building housed the business of Chris Stoltzfus, who provided a crop-dusting and spraying service for the farmers in the vicinity. The loss was estimated at $100,000.

The three-story brick and frame building was located on the north side of Route 30, directly opposite the Coatesville Airport, near the city by



that name. The airport hangars and other structures were threatened, as was the Stoltzfus home about forty-feet distant from the repair shop.

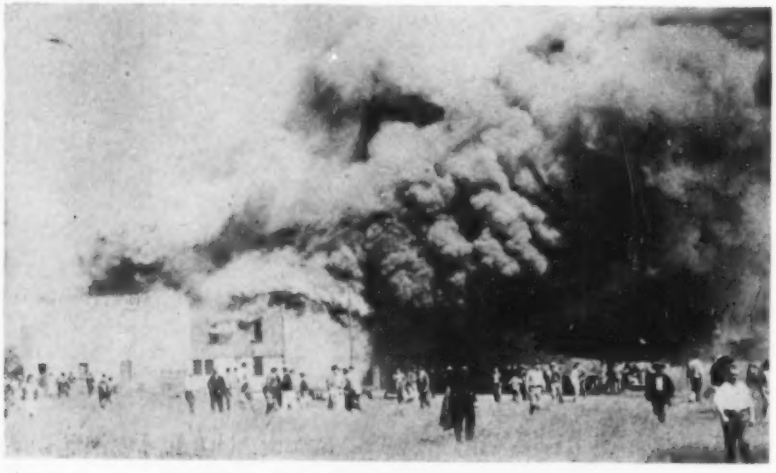
The fire was discovered at 10:30 in the morning and traced to a basement room in the northeastern section of the old building. Employees attempted to extinguish the fire with CO_2 extinguishers but it had made too great headway and they were unable to get close enough to it with their equipment to control the flames, which were fed by barrels of lacquer thinner and other highly flammable material used in the repair and maintenance of airplanes.

When the first firemen arrived, in response to what is said to be a delayed alarm, they were handicapped by the absence of adequate water supply. Heavy black smoke was rolling from the building, which was also charged with toxic fumes, and firemen were unable to remain in the structure for any length of time.

An 8,000-foot relay was set up along the Lincoln Highway (Route 30), utilizing eight pumpers. Although the streams provided by this relay were insufficient to subdue the roaring fire in the airport shop, they were effective in preventing extension to the exposed Stoltzfus home.

In addition to the relay operations, companies in the surrounding rural towns having large booster tanks were called in to aid in protecting other exposures in the path of the strong wind, blowing in the direction of the highway, and the Coatesville Airport. These risks included three restaurants and other structures, as well as a two-story frame building of approximately 100 square feet floor space. Booster lines were used to protect these occupancies against flying embers and radiated heat.

Two airplanes were removed from the repair shop but repair parts and equipment and fifty airplane motors, described as irreplaceable, were destroyed. (FIRE ENGINEERING is indebted to Brandywine Fire Company No. 2 for the description, photo and diagram of relay operations).



Hangar Fire, Near Coatesville, Pa., Airport at Its Height

October Fire Losses Up

Estimated U. S. fire losses for the first 10 months of 1947 broke all records for any single full year in U. S. history, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Underwriters.

Losses of $54,946,000 during October brought the 10-months total to $572,928,000. The high record for U. S. fire losses was set in 1926, when fires destroyed $561,980,000 worth of property, and was nearly equalled in 1946 when $561,487,000 worth was destroyed, during the entire year.

October's losses were 37 per cent higher than the losses of $40,108,000 recorded in October 1946. They were 14 per cent higher than losses of $47,990,000 incurred in September 1947. The 10-months losses were 24.7 per cent higher than the first 10-months losses last year.

Two conflagrations during the month, the $5,000,000 Grace Line pier fire in New York City, and the forest fires in Maine, which caused an insurance loss of about $6,000,000, helped boost the October loss figure.

The fire destruction in October brought the total estimated losses for the 12 months ending October 31 to $675,728,000, an increase of 23.8 per cent over losses of $545,558,000 for the similar period ending October 31, 1946.

These estimated fire and lightning losses under fire insurance policies are on an incurred basis, including an allowance for unreported and uninsured losses.

Methyl Bromide as an Extinguishing Agent

Recently several small fire extinguishers have been put on the market in this country in which the extinguishing agent was Methyl Bromide. None of these extinguishers has been listed by Underwriters Laboratories.

(*Continued on page* 905)

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SCHOOLS AND DRILLS FOR FIRE OFFICERS

A POSTWAR development that appears to be gaining impetus is that of holding regular officers schools and drills in metropolitan fire departments in addition to customary company drills.

Such officers' training generally takes two forms: (1) to prepare officers for planning and conducting company drills and (2) to train officers in their calling as officers—in leadership, discipline, teaching, and so on. Officers who attend these specialized training schools may be rewarded in various ways, financially or by credit on their records. In some cases the training courses are conducted on city time and the officer is required to take it. No credit is therefore given for the course.

This development leads the editors to wonder what fire chiefs generally think of the wisdom of such advanced specialized training. To that end, we devote the Round Table for the next two issues.

Readers are invited to send in their comments on this subject. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

HERE IS THE QUESTION

1. **Do you hold special schools or training sessions for officers apart from schooling and drilling given the rank and file?**
2. **Do your officers receive any reward or credits for taking this training (or attending officers' School)?**
3. **If so, how is this handled? On what basis?**
4. **What suggestions have you for furthering officer training to (a) improve their efficiency (b) keep officers from getting in a rut?**

Discussion of the Topic

Edward E. Wischer, Chief Engineer, Milwaukee, Wis.: As a part of the Drill School curriculum, company officers and assistant chief officers attend separate classes for complete instructions on proper submission of all department reports and on the latest approved fire fighting methods. Officer groups are formed and taken on tours of inspection to thoroughly familiarize officers with the location and proper use of fire fighting appliances in the event of fire at these locations.

Below is a sample of the Milwaukee Fire Department's Bureau of Instruction and Training Attendance & Training Record, which becomes a permanent record, and grades scored during class periods are posted for future reference. These grades are averaged and when a card is full, grades are brought forward on second and any succeeding cards. Eventually they are used to rate the individual in promotional averages during examination periods. The records run continuously and serve for all ranks in the fire service.

The officers receive a combination of grades on the Training Record that vary depending upon the subject and whether the class being conducted is special for officers alone or for fire fighters and officers combined.

At present, the Deputy Chief, Fire Captain and Fire Lieutenant of the Training Bureau attend all greater alarms to assist in supervising and to observe whether proper fire fighting and drill practices are employed to the greatest extent.

Assistant chief officers must supervise regular company weekly drill sessions at the quarters of each company in their assigned districts.

Suggestions made by members for improvements are welcomed and are carefully analyzed before being accepted or rejected.

William J. Connelly, Chief, Syracuse, N. Y.: The Syracuse Department of Fire has been without a fire training school plant for several years which has forced us to carry on a modified course of training. However, a new training school and tower is anticipated in the near future, since the money has been appropriated, the contract awarded, and actual work has been started on the project.

In the absence of a training tower, fire school activities have been conducted at the quarters of Engine Company No. 21. All of the recent appointees have been put through an intensive course of training in the various evolutions with the exception of tower work. This schooling is supplemented by company drills and instructions for officers and men.

We inaugurated this week a fire college for chief and company officers with headquarters at Engine Company No. 1 which is centrally located. These classes are to be held regularly throughout the winter months, under supervision of the fire school director and a captain detailed to the fire school.

At present, no provision is made for any special reward or credit for taking this course, as attendance is more or less compulsory and is therefore a routine activity of this department.

Personally, I am strongly in favor of a broad and extensive training program for officers and men alike. I am firmly convinced that none of us can get too much sound training. In my opinion, this kind of work is bound to increase the efficiency of the men and keep them abreast of improvement and progress being made in the field of firemanics.

Roy B. Whittlesey, Chief, Houston, Tex.: We do have special schools and

(*Continued on page* 898)

Form FI20-IM-2-45

MILWAUKEE FIRE DEPARTMENT

BUREAU OF INSTRUCTION AND TRAINING — ATTENDANCE AND TRAINING RECORD

Name _____ Rank _____ Company _____

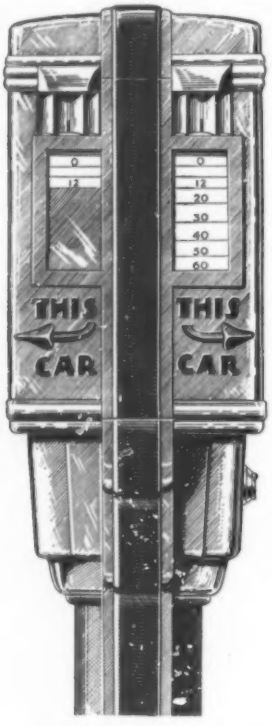
Date of Appointment _____ Badge No. _____ Date of Birth _____

DATE	SUBJECTS																								AVERAGE
	General Appearance	Department & Courtesy	Initiative	Aggressiveness	Knowledge of Evolutions	Performance of Indoor Evolutions	Performance of Outdoor Evolutions	Adaptability	Reliability	Judgment	Efficiency	Physical Ability & Endurance	Interest in Department	Rules and Regulations	Leadership	Ability to Instruct	Ability to Supervise	Effectiveness	Report Writing	First Aid	Special Drills	Lectures	Miscellaneous Subjects		

Manufacturers' Announcements

American-LaFrance Enters Parking Meter Field

E. E. O'Neill, president of American-LaFrance-Foamite Corporation of Elmira, N. Y., manufacturers of fire-fighting apparatus and equipment, has just announced the acquisition of the con-



The New Alfco Twin Parking Meter

trolling interest in International Meters, Inc., a New York corporation with offices in New York City.

The International Meters, Inc., will henchforth operate as a subsidiary of American-LaFrance-Foamite Corporation serving as a separate sales company for the distribution of the newly invented Alfco Twin Automatic Parking Meter, an ingeniously engineered unit which parks two cars independently of each other with but one meter, one clock, one housing, one pedestal and one coin box.

The new Alfco Twin Meter is now being manufactured by American-LaFrance-Foamite in its Elmira, N. Y., factory, the first of the new Meters scheduled for completion on December 15th.

According to claims made by the manufacturers, the Alfco Twin Automatic Parking Meter is the greatest innovation in the history of metered parking control.

It revolutionizes the former method of crowding each single car into a cramped space at a single meter, by parking two cars bumper to bumper at the Twin Meter, leaving all the parking area thus saved for easy entry or exit to and from the parking space. It does not reduce the number of parking stations.

It does, however, nearly cut in half the original cost of Meters, as well as the expense of installation, maintenance, winding and collections because one Alfco Twin Meter does the work of two single meters. It simplifies policing, as one Twin Meter clocks two cars at a time.

Even though it does not reduce the number of parking stations, it does provide more space for the motorist in which to park. It gives clearer vision of traffic lanes, thus helping to speed up parking action. It helps to eliminate traffic blocks with their turmoil of confusion and nervous tension to impatient drivers. It means fewer locked bumpers and fewer dented fenders.

One-Piece Asbestos Suits

One-piece asbestos fire fighting suits, built to Navy specifications, are being made available to fire fighting companies, oilwell operators, airports, first aid rescue squads and industrial and chemical plants by the Little Trading Corporation, 153 N. 12th street, Newark, N. J., it is announced.

The suits, which come in standard sizes, and are adjustable for all sizes are complete with "Mine Safety Appliance" Skull Guard, Visor and Safety Helmet, all of which can be used separately. They have been specially treated for oil and gas fires.

Hamilton Fire Hose Booklet

The Hamilton Rubber Mfg. Corp., of Trenton 3, N. J., has just issued an attractive 16-page booklet in two colors, describing and illustrating the various types of fire hose made by that company. The following brands are included: Municipal: Flexrite, Fire Chief, Siren, Leader Line and Forestry; Underwriters: Cotton Rubber Lined and Cotton Covered; Oil and Solvent Resistant: Neoprene; Fire Engine Suction: Black Crown, Hamilton Soft Suction; Chemical and Booster: Underwriters' and Wizard.

Rockwood Announces New Valve

Rockwood Sprinkler Company, Worcester, Mass., has introduced a new Rockwood Ball Type Valve, designed and constructed for service on pipe lines where full-flow tight seal and quick opening or closing is desired.

The product, now on the market, is described and illustrated in a colorful bulletin just published. This lists the following advantages: Unrestricted pipe area—full flow; does not leak after continued service; no exposed seating surface in open or closed position; easy to open or close under full pressure; installed in any position; quarter turn (90 deg.) opening and closing valve.

Earthquake Valve

A Sentinel automatic earthquake valve has been installed by Pacific Telephone and Telegraph Company, which is it is said, will shut off the gas supply to the Company's new Market Street Building in San Francisco, in addition, if an earthquake of any serious proportions occurs.

The valve is a four-inch size and was procured from the Security Valve Company of Los Angeles, specialists in the manufacture of automatic valves designed to reduce fire hazard.

Acid Pump

A safe method of acid handling is provided by a manually-operated acid pump, supplied by General Scientific Equipment Company, 27th & Huntingdon Streets, Philadelphia, Pa.

Corrosive liquids come in contact only with the corrosion-resistant tube and

Bulb-Operated Acid Pump

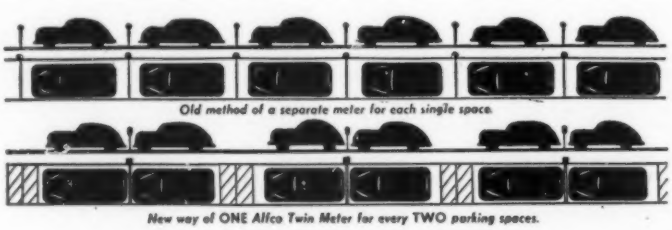
cannot affect other parts. When the pump is removed, acid drains completely. No tilting of the container is necessary.

General Scientific Pneumatic Acid Pumps are supplied in hand- or foot-operated models. Either can be equipped with a lead tube for sulphuric, hydrochloric, hydrofluoric and similar acids or with a Saran (flexible plastic) tube for other liquids.

American-Marsh Appoints Agent

American-Marsh Pumps, Inc., of Battle Creek, Mich., has announced the ap-

(*Continued on page* 905)



Old method of a separate meter for each single space.

New way of ONE Alfco Twin Meter for every TWO parking spaces.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

"Now-You-Tell-One" Department

In the nation's capitol, if you see a bonfire, look the other way—it may cost you dough to watch!

Last year, three negroes were ordered by Judge Thomas Dewey Quinn in Municipal Court of the District of Columbia, to pay a fine of $2 or serve two days in jail each for watching a bonfire in the 1500 block, Marion Pl. NW.

Seems the seldom-used District ordinance was dug up by Second Precinct Policeman R. H. Johnson, who arrested the three. The ordinance states it shall be illegal to "be present at a bonfire on a public place between the setting and rising of the sun." (Thanks Irv'Johnson)

* * *

Double Feature, With Death

In Cincinnati, Fireman Walter Saul sat through a double feature at a neighborhood theatre with the head of a dead man resting on his shoulders.

According to Saul, he and his wife occupied seats next to Aloysius Bollin, 58, a printer and his son Joseph, 6, at the end of the previews. A few minutes later, Saul felt a head on his shoulder and thinking Bollin had fallen asleep, attempted to rouse him. Saul, former member of the Cincinnati Fire Department's Rescue Squad, checked the man's heart and pulse, and discovered he was dead.

The fireman waited for a break in the program before removing the corpse because he didn't want to attract attention and cause a possible disturbance. So, the second picture over, Saul carried the body from the theatre and called an ambulance — after telling Joseph, who was unaware that his father was dead, to go home and bring his mother because "your father is sick."

* * *

Dog Latin!

Firemen at the Cicero, Ill., fire station swear that Sam, a dog who drops in occasionally, can talk. Joseph David, assistant chief, claims that he and several other firemen heard Sam make several "remarks"—and "it sounds just like talk."

"That dog controls his bark so it comes out like words," is the way David puts it. He says that Sam's master, Edward Nowy, a neighbor, brought Sam in the firehouse and offered him a piece of liver sausage. "The dog slowly produced a sound that said just as clearly as I'm saying it, 'I want it'," the assistant chief declared.

Mr. Nowy says that Sam, a 4-year-old shepherd, also says "I want out" and "water". However, he wouldn't admit that as yet Sam could call out the location of fire alarms.

* * *

Santa Pays Firemen a Visit—and Pays

The Holy Name Society of the New York Fire Department is planning a Christmas party for children of the New York Foundling Hospital and the City's fire fighters generally are out to give the orphans a record time.

On the night of November 18, "Santa Claus" walked into the quarters of Ladder Co. 3 on E. 13th Street, Manhattan. He didn't have the conventional snowy beard, but he certainly had old Chris's heart of gold. And if you doubt it, ask Fireman Heffernan and his pals.

According to Brother Heffernan and others who were on duty the visitor, who appeared to be about 60, said "my name is James Smith. I live at 110 E. 11th street. I'm a porter at the New York Athletic Club. I saved this money all year as my contribution to the Christmas party for the orphans." Then he handed Fireman Heffernan a cloth bag containing $136.77 in pennies, nickles, and small change. "Merry Christmas" he said—and walked out through the station door.

* * *

Brother—Page "Detective" Ripley

Although we've never heard the end of the yarn, the opening chapter is good enough to quote—with credit to an anonymous contrib' from Marthaville, La. who clipped it from a Goose Creek, Texas, paper.

Seems that firemen were called to "213 Cherry, Baytown, Tex., early one day, where they found smoke pouring from the house. While the smoke-eaters were searching for the fire—for where there's smoke of course there must be fire" the smoke ceased as abruptly as it had appeared.

Their search fruitless, and fire-less, firemen ordered the removal from the house of an invalid woman, and notified other tenants to watch for a blaze in the walls, which they were fearful might eventuate. Then they returned to quarters, to keep an ear on the gong for the possible alarm.

"I know we didn't dream that smoke, and we didn't scare that fire to death. So we'll probably go back," a fireman said.

Thus far, our Contrib' has failed to advise us of the final outcome.

* * *

Six Have Monoxide Hangovers

Entering a Clairton, Pa., tavern early one November day, Harold Ausburn, found five men, one a policeman, and one a woman, lying silent on the floor. "This was either quite a party," Mr. Ausburn murmured to himself, "or—" so he decided to call police.

A rescue squad told him he had probably saved their lives, and his own. Carbon monoxide had overcome Mr. and Mrs. Joseph Capristo, the owners, with two customers, and a bartender. The policeman had attempted to help them and was himself overcome.

May we suggest, Mr. Capristo, next time you S O S the *Fire* Department?

* * *

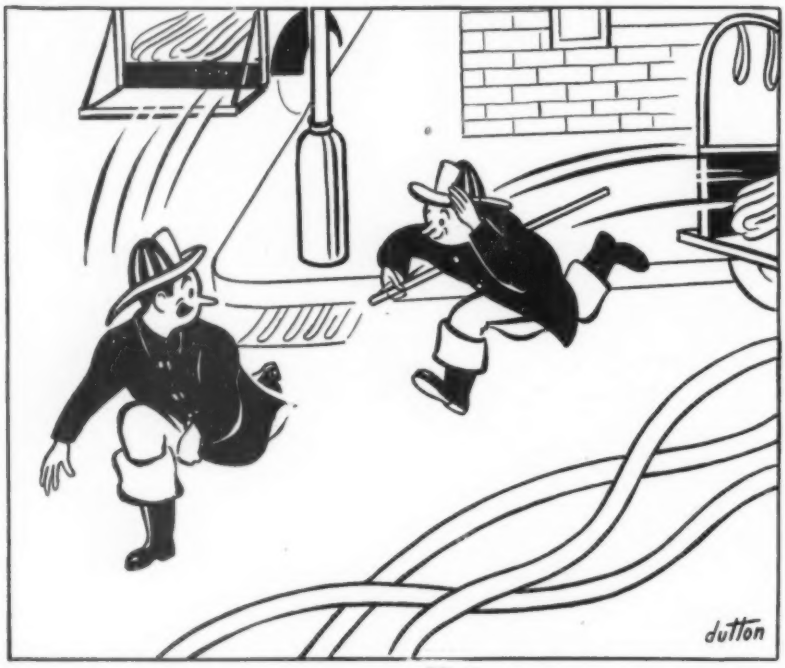
Hot Off the Tape

The 20-year-old, 195-pound son of a Philadelphia, Pa., patrolman was arrested on a charge of having set fire to historic St. Anne's Roman Catholic Church on Armistice Day, last. Fire Marshal George J. Gallagher said the youth signed a statement confessing he started the fire which left only the walls of the church standing. . . . In Greensburg, Pa., Norman Yates, 15, died in Westmoreland Hospital of burns suffered when he poured anti-freeze solution into a coal stove. . . . In Boston the Beacon Hill building of the 102-year-old New England Historical Genealogical library was swept by fire, November 19 last, ruining records dating from Mayflower days. . . . Henry Stone, 64, of Binghamton, N. Y., perished with his sister-in-law, when he re-entered his burning home in Ouaquaga, to get money he had been saving for funeral expenses. . . . A "back porch" blaze that caused property loss estimated by Fire Chief Floyd Couse, of Huntington, W. Va., to the home of Mr. and Mrs. E. A. Hyldoft, parents of Joan Hyldoft, prominent figure skater currently appearing in "Ice Time," put more than 200 telephones out of commission. . . . When a mammoth dairy barn, covering with appendages more than two acres, adjacent to the Nevada State Mental Hospital, Reno, Nev., burned in November, the spectacular flames drew thousands of spectators to create one of the worst traffic jams in recent Nevada history. . . . Washington, D. C., papers tell the story of 3-year-old Jimmy Lee who was told by an employed baby-sitter (who left her charge to go shopping) not to move from his room—and obeyed. Firemen carried him from the room where he was found sitting quietly in his chair while smoke from a basement fire filled the house. . . . Near Huntington, L. I., the 90-year-old Lloyd Harbor Lighthouse, on a reef near the harbor, was destroyed by fire during gale-winds, while firemen were unable to reach the two-and-one-half story structure. . . . A school girl's pets, a cat and a dog, are credited with saving the lives of twenty-eight persons, overcome by coal gas in a Brooklyn four-story tenement. They barked and meowed an alarm, and then collapsed. Twenty-two policemen from two emergency squads and three radio cars carried out the victims and successfully applied artificial resuscitation. . . . Patternmakers in New York City's Fire Department Shops now get $13.60 a day. . . . A large barn on the farm of A. Morris Urquhart, pioneer in the manufacture of foam for fire fighting, was destroyed by fire November 10 last, with estimated loss of $40,000. A farmhand removed fifty-three steers from the building but Urquhart said $20,000 worth of lumber was lost in the blaze, which he blamed on arsonists; he posted a reward of $500 for their arrest. . . .

Several clippers sent us the one about the fire drills at Emerson grade school, Oklahoma City, which are so much fun that pupils pay to have 'em. The school installed one of the rotary metal escape chutes, like a super-de-luxe playground slide. The kids can ride all they want—at a penny a slide. The cash goes into the school lunch fund. In case of fire, the ride is "on the house." . . . Ranchers of Capistrano, Calif., where the swallows swarm, have raised a fund of $3,000 to purchase a tractor-bulldozer for fire fighting in the district. . . . In Lawton, Okla., fire in a scrap lumber pile proved too much for a hefty Holstein bull, housed in a nearby shed. Firemen said the modern "Ferdinand" took off like a blimp in a gale o' wind and plunged right through the wall of his shed. Thus far, no message has been received from the critter—not even a "bulletin." . . .

(*Continued on page* 904)

FALSE ALARMS



"Why, Pinky Jenkins! Haven't Seen You Since We Ran on the Relay Team for Elmont High"

Customer with hangover: "Give me something for the shakes."

Bartender: "What do you want?"

Sufferer: "Something tall, cold, and full of gin."

Nearby Drunk: "Sir, you are speaking of the woman I love!"

Professor: "Miss Adams, you've read that sentence wrong. I'm disgusted with your progress. Won't you ever learn? The quotation is, 'All men are created equal,' not 'All men are made the same way!' "

A woman complained to her neighbor, who every evening about midnight walked his dog by her house, that the pooch always paused by her new shrubs.

She got this answer: "Now don't fret, Ma'am, I always start around the block the long way, and by the time he reaches your bushes, it's only a gesture."

When Junior asked his parents about life they told him they had planted a seed and he grew from it. That night Junior put a watermelon seed under the rug. The next morning he lifted up the rug and there was a big cockroach.

Junior addressed the cockroach sternly: "You're very lucky. If you weren't my son, I'd squash you."

Lady on telephone: "Yes, dear, that's all right. Don't hurry; enjoy yourself. Goodbye."

And as she turned from the phone her gentleman visitor asked, "Who was that?"

"My husband."

"What did he want?"

"Oh, he just called to tell me that he'd be late getting home tonight. He's downtown playing poker with you and a bunch of the boys."

Professor: Young man, are you teaching this class?

Freshman: No, sir.

Prof: Well, then, why don't you quit acting like a fool?

A Congressman received an invitation to speak at a Fourth of July celebration in his district. The invitation read:

"You are invited to be one of the speakers of our Fourth of July celebration. The program will include a talk by the Mayor, recitation of Lincoln's Gettysburg speech by a high school pupil, your talk and then the firing squad."

Too Much for Maggie

A canvasser for a magazine house walked to the door of the prospect and knocked. A colored maid answered.

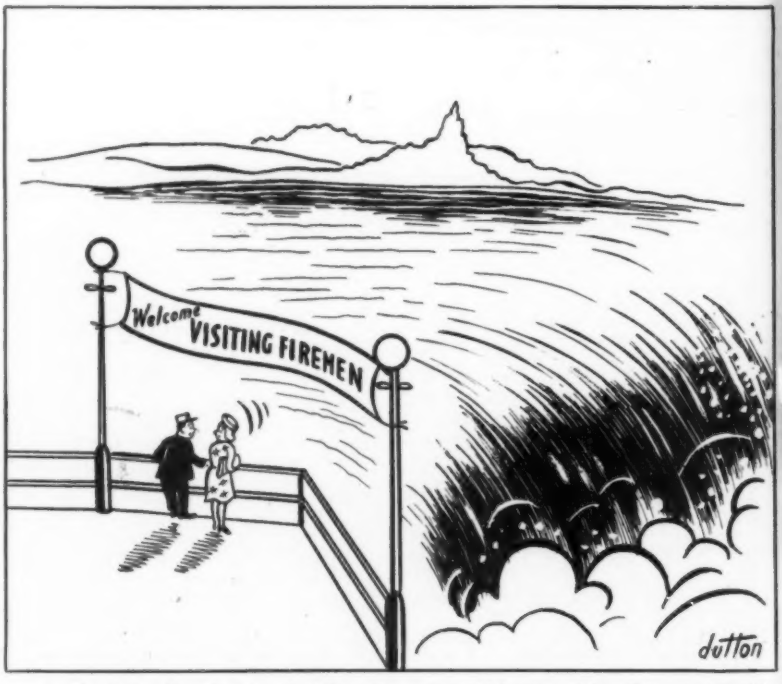
Canvasser: "Is the lady of the house in?"

Maid: "She's takin' a bath, suh!"

Canvasser: "I'd like to see her."

Maid (grinning): "I'se speck you would, white man."

There's nothing like a wedding
To make a feller learn,
At first he thinks she's his'n,
But later learns he's her'n.



"Can't You Stop Figuring the Water Pressure and Velocity and Just Enjoy the View?"

PERATING IN MOUNTAINOUS COUNTRY,

OPWOOD V. F. D. DEMANDS *POWER*

ND *SPEED* FROM THEIR APPARATUS...

Their New

HRENS-FOX

s what it takes

•

R DEPENDABLE
RE PROTECTION
rely on

AHRENS-FOX

Hopwood Volunteer Fire Department

HOPWOOD PENNA.

November 18, 1947

The Ahrens-Fox Fire Engine Corp.,
4932 Beech Street,
Cincinnati 12, Ohio.

Gentlemen,

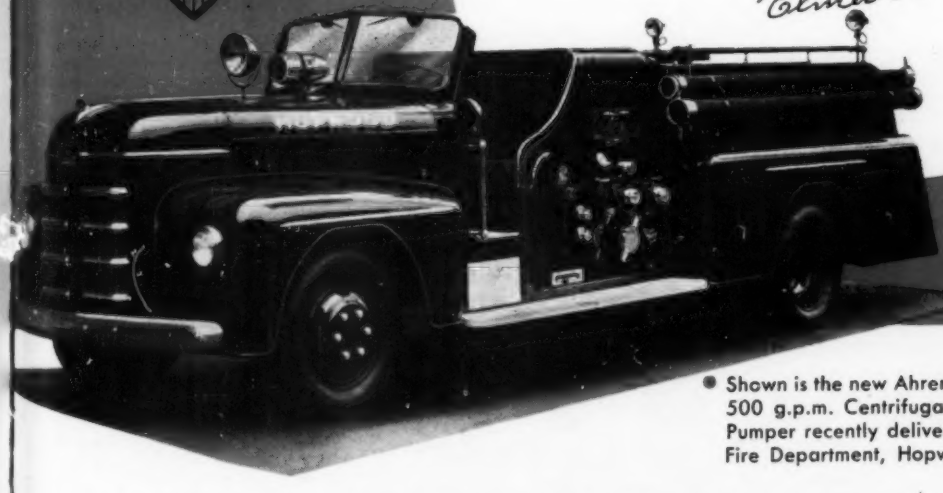
Having received our new 500 gallon pumper the first week in November, we feel at this date that we have not misplaced our confidence in our purchase of this equipment. The underwriters' test of the pumping equipment shows plenty of power in reserve.

All of the members working with this centrifugal pump are certain that we will have no call for additional power or pressure.

As regards the workmanship and "super-designing" on all parts of the truck, the members of the company are more than satisfied.

Sincerely,

Steve Harmon, Chief.
Roy Latta Asst. Chief.
Emmet Seiler Captain
Stanley Morgan, 1st. Lieut.
Elmer Forsythe 2nd Lieut.



• Shown is the new Ahrens-Fox Model V. C. Special, 500 g.p.m. Centrifugal type, Triple Combination Pumper recently delivered to Hopwood Volunteer Fire Department, Hopwood, Penna.

THE AHRENS-FOX FIRE ENGINE CORP., CINCINNATI 12, OHIO

A PUMP FOR EVERY PURPOSE

Petroleum

(*Continued from page 864*)

and will simply burn as a torch, without danger to anyone.

This is not as crazy as it sounds. There are many large commercial installations where there are open flame vaporizers right alongside of the tanks and they have operated more safely than all others. Then there is a system of home butane service used in Texas, where there is a skirt built around the butane tank that sits next to the house being served. Inside the skirt and under the tank is an open flame burner that keeps the tank warm. When the demand for gas increases, the flame goes up and provides more heat. There have been no accidents with many thousand such installations.

What all this boils down to is this: if a plant is well designed and operated it can have open flames within five feet of the tank, pump and dispensing unit. If it isn't that well put together or operated, it isn't safe under any conditions and you should not allow it in your town.

I have had some correspondence lately about old gas plants and systems that have been converted to LPG. You have a real problem there, because the old lines have corroded and the new gas, being a solvent, finds all the holes and gets into the ground. There is only one cure—pipes that don't leak. However, the hazard isn't too serious or we should have had a lot more fires than have been reported. Actually, we have the same situation every time natural gas comes into a town for the first time. My advice is, be sure the gas carries a lot of skunk oil. Without it you cannot detect leaks. Lines should be tested frequently during the first year, since that is when leaks develop from the solvent action of the gas on the tar in the lines. Some companies inject steam into the lines with the LPG in order to rust up pin hole leaks.

New England Disaster

(*Continued from page 867*)

the ability of local forces to confine them, much of the out-of-area aid which was rushed in consisted of inexperienced volunteers, members of the armed forces, farmers and college students. Nearly all were willing but they could hardly be counted on to hold the lines in the smoke of conflict as could the trained forest fire fighters and municipal and volunteer firemen.

7) EQUIPMENT: The disaster, like others before it, demonstrated the need for more and better forest fire fighting equipment and apparatus. Men were sent to fire lines with inadequate and makeshift hand tools; bulldozers, which were invaluable, were lacking; the available supply of small, light, portable pumps, and of small hose proved woefully inadequate. War surplus equipment in some cases could not be operated because of mechanical failure. There could have been more planes with radiophone connections in the initial stages.

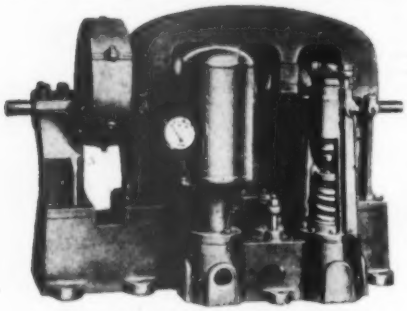
The Government agencies including the W. A. A. and the armed forces, lost no time in sending help, but much of the equipment could not be used because of differences in thread or lack of fittings. Some was totally unsuited for the purpose. Frantic efforts to make up adapters in Portland, so that some of the flown-in hose could be used, were only partially successful.

8) TRAINING AND DIRECTION: The fires clearly demonstrated the value of the trained forest fire fighter over the untrained. They also emphasized the need of experienced leaders, both in the forestry as well as the community fire services, and of the fallacy of leaving the technicalities of fire control to "brass hats" of the armed forces, no matter how willing and whole-hearted their cooperation.

The need for better training in forest and field fire control was evidenced in many ways: in locating and laying out fire lines; cutting breaks and backfiring; in protecting exposures and mopping up and in properly utilizing modern scientific fire protection tools and equipment and extinguishing agents which are presently available.

Nor should municipal fire forces be immune from certain of this training. Not many city fire departments have occasion to fight other than normal grass and brush fires. Few have any knowledge of the type of light, mobile pumps, and small hose, and of the other tools of today's forest fire fighter.

Fundamental schooling in this type of fire control is recommended for all fire services, as well as for all fire wardens and rangers and advanced training for all those who must direct and administer the combat forces in



● *The dependable Hardie pump is the heart of this magnificent Fog Fire Fighter built for the Catawissa, Pa. Fire Department by Howe Fire Apparatus Company.*

● *The Hardie Imperial LCXA Pump delivers 60 gallons per minute at 800 P.S.I. at 130 R.P.M.*

● *The Hardie Imperial XCXX Pump delivers 35 gallons per minute at 800 P.S.I. at 118 R.P.M.*

The Hall-Mark Of A Dependable Fog Fire Truck

If there is a Hardie High Pressure pump in your Fog Fire Fighter you can rest easy. That pump will not fail you. 800 PSI, and the gallonage you want will be delivered at the fog nozzle steadily, continuously and without faltering no matter how long the hose line.

The Hardie Fog Gun with single trigger control, saves labor, time and trouble delivering the stream or fog you want by mere pressure of the fingers. Specify Hardie pumps and gun. Write for complete data.

THE HARDIE MFG. COMPANY
Los Angeles 11, Calif. • Hudson, Mich • Portland 9, Oregon
Export Dept.—Detroit 26
Canadian Office—Clarence W. Lewis & Son Ltd.—Grimsby, Ont.

HARDIE
High Pressure **PUMPS AND FOG GUNS**
for Fog Fire Fighters

forest and field fire fighting and prevention.

9) MISCELLANEOUS: There are many more conclusions to be drawn from the history of the New England disaster, but space does not permit more than briefest references to them at this time.

It should be pointed out that no community is too small or too poor to afford one or more small forest fire pumps and a few thousand feet of suitable hose, and some sort of water carriers. Too much reliance should not be placed on neighboring community fire departments, or on state aid.

Another thing: it costs very little to increase and develop natural water supplies in most areas. Forest fire control plans should envisage damming small streams, building drafting platforms for fire pumpers, making wells and other inaccessible sources available for fire fighters' use. And communities as well as states should map all such available water supplies.

In this modern age, quick assistance in a disaster may come by air. The use of large cargo planes necessitates adequate runways and other airport facilities. In Maine, the Augusta Airport was the focal point for air traffic during the disaster and considerable difficulty was experienced in handling the large planes because of the short runway. Modern disaster programs should analyze all area facilities for transporting aid by air and plan accordingly. And in this connection it is essential that when fire fighting equipment is being received and dispatched there be someone at the receiving and sending end who knows the make and purpose of the equipment, and whether or not it will meet the required need.

Contrary to published reports no dynamite was used in the effort to check the Mount Desert, or other fires and experienced fire fighters seriously question its use at any time.

Backfiring, like the use of explosives, should be undertaken only as a last resort and handled by men of experience and sound judgment. It proved a dangerous practice when undertaken during moments of excitement, and without considering all the possibilities such as sudden change in the wind, danger to other fire control forces, etc.

Wet Water Wins Favor

One detail of the October fire fighting which received little public mention was the use of water wetting agents—"wet water." Actually, this was the first large-scale operation for this newest of scientific extinguishing agents.

In its November issue of this journal there was mentioned the rather limited use of wetting agents in combating the Westchester County, N. Y., fire near Somers, N. Y. At that time details of the operations in New England were still unreported.

During the aerial and other surveys made by representatives of this journal, additional information was received which confirms the statements made in the November story of the fires. Much factual data still remains to be analyzed—reports from front-line fire fighters of their use of wet water as yet being incomplete. But it is confirmed by Maine's Forest Commissioner, Raymond E. Rendall, that in addition to use of treated water by fire companies that have been carrying it as "regular equipment" (and

THE SMALL EXTINGUISHER..
WITH THE MIGHTY PUNCH!

FOR FIRE HAZARDS THAT DO NOT DEMAND LARGER EQUIPMENT . . .

The new ANSUL 4 Dry Chemical Fire Extinguisher has fire stopping effectiveness far in excess of any other extinguisher of comparable size. Its compact size makes it ideal for locations where space is limited. The ANSUL 4 is easy to use . . . easy to recharge on-the-spot . . . and again ready to

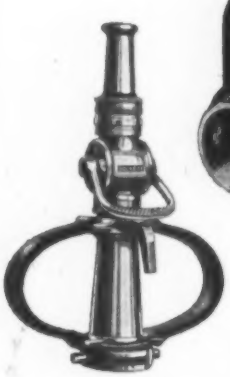
STOP FIRE FASTER!

MADE BY THE MANUFACTURERS OF ANSUL-DUGAS DRY CHEMICAL FIRE EXTINGUISHERS, MODELS 20, 30, 150A AND 350A.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

WHERE'S THE FIRE?

No. 925
Siamese with
Gates



No. 900
Shut-off Nozzle with
Play Pipe

No. 937
Exhaust
Whistle

Wherever it is, these and all the other items in the Buckeye Line are likely to be in action. Why? Because the efficiency of departments seldom exceeds that of the equipment they use. Check your equipment and write for catalog detailing these and other Buckeye items available.

No. 930
Junior Roto
Rays

No. 926 Expander

Buckeye

FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON AND BRASS WORKS • DAYTON 2, OHIO

HOWE Fire Truck Equipment to Meet Every Service

HOWE FIRE APPARATUS CO. Established 1872 1402 West 22nd Street Anderson, Indiana

in addition to its use in other sections of New England) 900 gallons of one make and approximately 50 gallons of another make of treated water were rushed into the Maine area and actually used on fires.

Until the details are complete the names of the fire fighting units that employed treated water will not be released. Application, however, is understood to have been in connection with the 34,000 acre fire in the Fryeburg-Brownfield-Denmark area of Maine and in the 100,000 acre fire in the Newfield-Waterboro-Lyman-Kennebunk area. It is understood also that wet water was used in the Bar Harbor conflagration, but chiefly in mopping-up operations. That fire started in a peat bog at the northern part of Island. It was believed controlled but burrowed deep under the surface and later broke out anew, defying the efforts of crews from the Federal Reservation of Arcadia Park, firemen under Chief David Sleeper of Bar Harbor and volunteers. On October 20-22 it was again believed controlled but with the rising wind it went racing toward Sommesville.

Penetrates Duff

Some firemen who fought that fire are convinced that had wet water been available in sufficient quantities during its initial stages it never would have gone out of control, wind or no wind. They point out that experience with wet water shows it is the only liquid extinguishing agent that really penetrates duff, and gets down into the very earth to reach deeply imbedded fire. The tricky thing about Maine fires, they point out, is the habit many of them have of burrowing under the surface, to burst out later at widely scattered places. Only trenching or flooding the entire area has been effective, until now, in extinguishing these fires. Wet water is said to be their chief hope for extinguishing these embedded fires.

Used in Pump Tanks

In Maine, forestry men and community fire fighters, using treated water in tank-pumps, supplied from larger carriers, are reported to have found greatest results from its use in controlling ground fires, particularly those in heavy duff and ground covering, and in knocking out fire in tree stumps, logs and timber and slash.

In Maine, Masachusetts and Rhode Island the efficacy of treated water to get to the heart of smouldering fires in stumps, particularly in rotten logs, and by extinguishing these fires, to prevent later ignition when the wind increased or changed, was noted.

In two fires in the Rhode Island area, those at Lincoln and Great Swamp, wet water was reported satisfactorily used by Rhode Island Ranger Clarence Edison. It was also reported applied in operations on the 10-mile front fire near Rochester, N. H., but details are lacking. According to Chief Daniel B. Tierney of Arlington, Mass., a number of cities and towns in that State use wet water as regular equipment, and in this connection, applied it during some of that state's 100 and more fires. It was used, reports say, among others by the Weymouth Fire Department. The sum total of reports clearly attest the value of surface reducing agents in forest fire fighting.

Providence Fire

(*Continued from page* 868)

one of several changes put in by the fire prevention bureau following the Cocoanut Grove disaster, and were intended as exits for pin boys and employees.

There were two brick fire walls one which separated the Steak House and Muriel Room with its twelve alleys from the main bowling center, and one which divided the A. & P. Store and storage building from the Recreation Center. There were two kitchens in the restaurant, where cooking was done behind glass partitions in view of patrons. A ventilating system is said to have carried cooking fumes to the outer air through the Muriel Room and this and the main bowling center also were connected by a ventilating system. The extension of the fire throughout the entire Recreation Center is attributed by some to this system.

The fire started in the oven of the kitchen at the north side of the restaurant just before 10 P.M., according to employes. A chef reported he was broiling ten pounds of bacon in the oven when grease flared up. The chef said he "threw soda and water" on the burning broiling pan and closed the oven door to smother the flames. "After a minute or so," he said, "I opened the oven door again thinking the flames would be out; instead there was another burst of flame, and this time there was no stopping it."

When smoke entered the Muriel Room, pin boys shouted "fire," and left by the rear exits. Bowlers and spectators, however, paid little attention until flames suddenly leaped from the ventilator openings in the walls of the Recreation rooms and a rush for the cloak room began with flames licking at the stampeding patrons as they fought to reach safety. Some were knocked down and trampled in the crush but later were dragged to safety. One glass exit door was reported locked, but the glass was kicked out and many escaped through this opening, some suffering cuts and contusions. A few managed to escape by means of the windows facing North Main Street. Parts of the ceiling fell upon the last persons to escape. Meantime all employees and the thirty patrons of the Steak House walked out the exit leading from the restaurant to another door in the Recreation Center, and thence to the outside.

The first alarm was sent in from Box 2242 by the operator of a gasoline filling station next door. By this time, it is said the flames had reached all parts of the Recreation Center.** Two policemen pulled a box at Tenth and North Main Street at about the same moment. A radio scout car arrived quickly and Sgt. Kenneth Durrell used his radio to call for help.

Additional alarms were sent in as follows:

9:59 P.M. Box 2242 Acting Batt. Chief Al Ryan first due.

10:08 P.M. second alarm. Chief Thomas Cotter responding.

10:23 P.M. third alarm.

10:39 P.M. fourth alarm, sent by Chief Cotter.

11:06 P.M. fifth alarm, Chief Cotter.

** Some members of the fire department place the actual start of the fire as early as 9:00 P.M., nearly an hour earlier than the time set by restaurant employees.

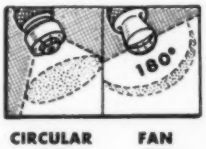
It's the NEW O-47-A AKROLITE
(LIGHT WEIGHT ALLOY)

BOOSTER FOGNOZL

ACTION—JUST A TWIST OF THE WRIST FROM SHUT-OFF THROUGH FOG AND STRAIGHT STREAM!

SMOOTHNESS
FINGER-TIP CONTROL AT 50 PSI OR 800 PSI

LOW WATER DELIVERY—9 to 14 GPM @ 100 PSI



CIRCULAR TIP No. 47-14 FAN TIP No. 47-9

CHOICE OF:
1. STRAIGHT STREAM TIPS 1/8"-3/16"-1/4"
2. FOGTIPS—FULL CIRCULAR FOG PATTERN OR WIDE FAN TYPE (Ideal for brush and grass fires).
3. THREADS 3/4" OR 1"

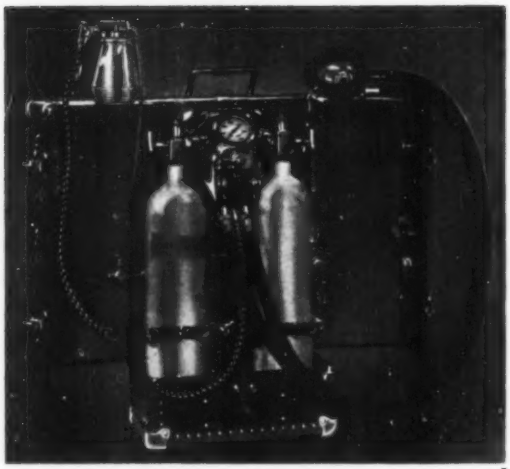
CUT YOUR EQUIPMENT COSTS!
JUST ONE NOZZLE FOR EITHER LOW OR HIGH PRESSURE BOOSTER LINES.
Make this test yourself!

WRITE IN TODAY FOR FULL INFORMATION ON THE O-47-A BOOSTER

FOG NOZZLE INTERNATIONAL, INC.
SUBSIDIARY OF AKRON BRASS MFG. COMPANY, INC.
1520 E. SLAUSON AVE. • LOS ANGELES 11, CALIF.

THE STEPHENSON RESUSCITATOR

YOUR FIRST THOUGHT IN LIFE-SAVING



Because -

You can now, for the first time, lower operating pressures when you encounter an injured chest, third degree burns, or a small, blue born baby.

You can now mix air with oxygen as the patient recovers. This is good for the patient and saves the oxygen.

Write today for literature or for a demonstration.

STEPHENSON CORPORATION
RED BANK, NEW JERSEY

FIRE APPARATUS DEALERS

A few valuable Dealer Franchises for Ward LaFrance fire apparatus are available in desirable territories. If no dealer has been appointed in your community, write Ward LaFrance today.

WARD LAFRANCE TRUCK DIVISION
Great American Industries, Inc.
ELMIRA, NEW YORK

First firemen on the scene were met by a milling crowd of excited patrons, many of them cut or burned, some with clothing partially torn from them, struggling from the exits. Members of Hose 17, first due, found the Steak House fully involved in flames, which were also visible through windows of the Recreation Center.

Fire fighters were met by hysterical persons who were sure there were many persons still trapped inside the vast structure. But their efforts to work inside the building were thwarted by those escaping, and flames which quickly burst from all openings. Several witnesses testified to being literally blown out of doors and windows by what was evidently a backdraft, occurring when windows were smashed. The ground in the parking area by the Center was littered with shoes and apparel.

Automobiles, occupying the parking areas in front and at the south end of the Center, proved a hindrance at the outset. Efforts to move them out of the way with wrecking cars caused further confusion.

Using hand lines, early arriving firemen endeavored to reach the fire in and near the cloak rooms, where it was believed many were trapped but were forced to remain outside. With the fall of the roof shortly before midnight, they were driven back to North Main Street. Shortly thereafter the front wall fell. With the later collapse of the rear wall on Nahant Street, men of five fire companies narrowly escaped being caught. They had been operating hand-lines through windows, close under the brick wall, when Battalion Chief John O'Brien noticed the weakening of the parapet and ordered them back. Less than three minutes later a large section crashed on the spot where they had been operating.

Early in the fire, Chief Cotter had realized the hopelessness of saving any part of the Recreation Center, restaurant or liquor shop. The latter's storeroom in its rear caught fire from the Steak House, and in turn the store became a torch, the heat threatening to communicate to the large supermarket by convection. Chief Cotter, therefore, concentrated the heavy forces on saving both the A. & P. store, and the heavily stocked storehouse in its rear.

Despite the fact that fire communicated to the roof section and some five bays of the storehouse, and into the cockloft of the main store, it was checked, but not without heavy water and smoke damage. Firemen attacked from the inside with hand lines, through the store front, hitting the fire, after pulling the ceilings. Other companies operated streams on the store roof, and over it onto the fire from ladders on the north wall. Still other units, after considerable effort, forced their way into the lower part of the storehouse to kill the fire in the loaded upper bays adjacent to the partition wall that divided the structure from the Muriel Room alleys and Steak House. Meantime, street lines in the rear wet down the roof.

With the breaching of the walls of the Recreation Center, streams were directed into the blazing interior from short range and gradually the fire was overcome. By 2:00 A.M., Chief Cotter dismissed all but eight companies and at that time firemen began searching the ruins for possible victims. With

daylight, they were able to enter what had been the cloak room to find no dead but that many patrons had not stopped for their outerwear, some of which was still recognizable. By 8:40 A.M. traffic on North Main Street was moving and watch lines were operating from the rear on Nahant Street.

Pawtucket Responds

Although according to Chief Cotter, no outside aid was requested, the Pawtucket Fire Department dispatched a pumper and crew which stood by, the men for a time manning Providence hose lines. The Ashton Fire Department also sent its rescue squad and Chief George Kay and six men stood by until 1:45 A.M. One Providence pumper operated on the Pawtucket side of the boundary and many of the hose stretchers were 1,200 feet or longer.

Although one spectator died of heart failure, due to excitement watching the fire, and thirty-nine persons were injured, only two members of the fire department received hurts. Joseph Ferns of the rescue squad punctured his foot on a nail and Fireman Mitchell Woodbine, Ladder 6, suffered injuries to the left leg when he fell through the bowling alley roof (he was promptly rescued by fellow firemen).

Water Wetting Agents

(*Continued from page 869*)

but when the test was run they were found to differ. One mattress proved to be cotton, the other wool. For this reason an honest comparison was impossible and the test was not recorded. In further similar tests, the officials recommended that mattresses be equally divided, and comparative tests conducted using one half of each for plain and the other half for wet water.

Two other tests were discarded because mechanical or other factors made impartial conclusions impossible.

TEST NO. I

Part I—Ordinary water
Material: 6 identical cardboard cartons stuffed with excelsior, mounted in three rows of two cartons each, on shelves between horizontal supports.
Priming: none. Pre-burn: 33 sec.
Extinguishment time: 1 min. 14 sec.
Gallons plain water used: approx. 5 gals.
Run-off: heavy.

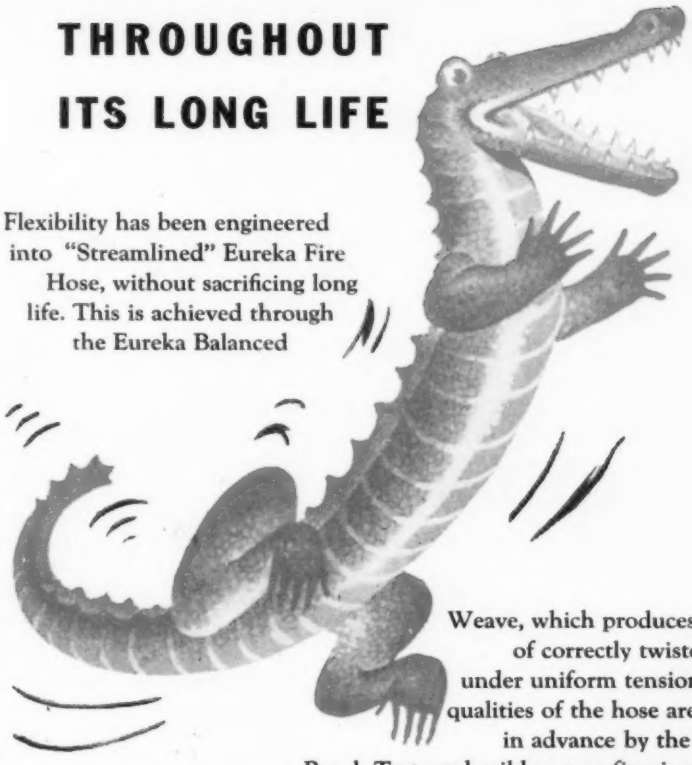
Part II—Treated (wet) water
Materials: same as Part I.
Priming: none. Pre-burn: 31 sec.
Extinguishing time: about 50 sec.
Gallons wet water used: Approx. 2 gals.
Run-off: noticeably less than plain water application.
Observations—Slight variation in method of ignition resulted in poorer pre-burn for Part I of test. It was impossible to measure comparative degree of consumption of flammables, but less overhaul was required in Part II. Pump pressures in both Parts of test: 70 P.S.I.

TEST NO. II

Part I—Ordinary water; using high pressure fog
Material: two large burlap bags of sawdust.
Priming: kerosene sprayed on, approx. 1½ min. Pre-burn: 5 min.
Extinguishment time: 4⅘ sec. (two blasts of gun nozzle). (1)
Gallons plain water used: 2.2 gals.
Run-off: some.

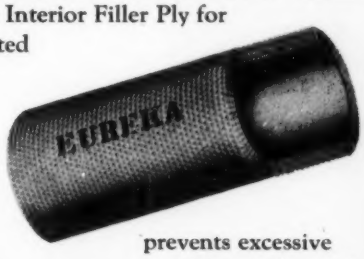
Part II—Ordinary water using low velocity fog
Material: same as Part I.
Priming: same as Part I. Pre-burn: 5 min.
Extinguishment time: 46 sec. (2)
Gallons plain water used: 16.8 gals.
Run-off: little.

KEEPS ITS FLEXIBILITY THROUGHOUT ITS LONG LIFE



Flexibility has been engineered into "Streamlined" Eureka Fire Hose, without sacrificing long life. This is achieved through the Eureka Balanced Weave, which produces a fabric of correctly twisted cords under uniform tension. Aging qualities of the hose are proved in advance by the Oxygen Bomb Test, and mildew-proofing is provided by Eureka's Formula "X".

Among the other unique advantages of every Eureka "Streamlined" Hose are Smooth Interior Filler Ply for maximum nozzle pressure, and a patented method of Controlled Curing which prevents excessive writhing and warping, permits easier handling on the ground, on ladders, or when loading on the wagon.



EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Division of United States Rubber Company

195 HUDSON STREET • NEW YORK 13, N. Y.

Part III—Treated (wet) water
Material: same as Part I and II.
Priming: Same as Part I and II. Pre-burn: 5 min.
Extinguishment time: 12 sec. (3)
Gallons wet water used: 3.6 gals.
Run-off negligible.
Observations: (1) High pressure fog applied at 610 PSI, NP. Force of blast actually blew out and scattered the sawdust. Second shot only necessary to extinguish smoldering burlap. (2) bags burst after 4-min. of pre-burn. (3) bags burst after 4-min. of preburn. Penetration of wet water was noticeable.

TEST NO. III

Part I—Ordinary water
Material: Baled hay (standard size, wired) 1 bale, upright.
Priming: Kerosene—1 min. spraying evenly over bale, except bottom.
Pre-burn: 5 min.
Extinguishment time: 62 sec.
Gallons plain water used: 22.7 gals.
Run-off: Heavy.

Part II—Ordinary water, using high-pressure fog
Material: same as Part I.
Priming: same as Part I. Pre-burn 5 min.
Extinguishing time (using straight stream): 39 sec.
Gallons plain water used: approx. 29 gals.
Run-off: Heavy.

Part III—Treated (wet) water
Material: same as Parts I and II.
Priming: same as Parts I and II. Pre-burn: 5 min.
Extinguishing time: 24⅘ sec.
Gallons plain water used: 7.5 gals.
Run-off: about one-half that of tests using plain water.
Observations: In Part II the H.P. straight stream was used at 600 PSI nozzle pressure. The force of this stream knocked the bale over. It was noticeable in all these tests that the final part of bale to be extinguished was the bottom surface. Treated water continued to penetrate the bale after the fire was knocked down. Less overhaul with wet water application.

TEST NO. V.

Material: two identical full-size sheets of wallboard, braced upright with wood supports, with identical piles of kindling and excelsior placed at the bottom rear of each board.
Priming: each board sprayed with kerosene on back, or "fire-side". Pre-burn. 12 sec. in each test.
Extinguishment: both boards were attacked from the non-fire side with water-fog, using identical lines and nozzle, one with treated (wet) water, the other using ordinary water. Neither fire was extinguished by the application. After 4½ min. application of each extinguishing agent both boards were allowed to continue to burn and after 10 min. a comparison showed the plain water board entirely consumed and the wet water board smoldering, but still intact. Cut away sections of each board showed complete penetration by wet water and only partial penetration by ordinary water.

TEST NO. VI.

Part I—Ordinary water—using low velocity fog.
Material: wooden shack; about 8 x 8 ft. floored and roofed; open window and door in line, front and rear. Miscellaneous combustible contents.
Priming: initial 50-sec. kerosene spray. Later, 1-qt. kerosene thrown on fire to accelerate burning. Pre-burn: 6 min.
Extinguishment time: 1 min. 9 sec.
Gallon plain water used: 41.4 gals.
Run-off heavy.

Part II—Treated (wet) water, low velocity fog.
Material: shack, duplicate of Part I except door and window not lined up and section of roof partly covered with composition board.
Priming: same as Part I. Pre-burn: 2 min. 30 sec.
Extinguishment time: 39 sec.
Gallons wet water used: 23.4 gals.
Run-off: about ⅛ of Part I test.
Observations: With shorter pre-burn, shack used in wet water fire was more fully involved when extinguishing operation started. Fact that door and window were not lined up in this structure doubtless made extinguishment more difficult, using fog nozzle, than where they were in line. The "wet water fire" vented itself somewhat through roof. Smoke and heat radiation were less in the Part II (wet water) test; there was also more steam. In both tests 1½-in. D.J. cotton rubber lined hose with Navy-type 1½-in. fog nozzle used. Pump pressures in both tests were 110 PSI.

TEST NO. VII.

Part I—Ordinary water, low velocity fog
Material: 6 gals. kerosene floated on water in small earth pit.
Pre-burn: full involvement of surface.
Extinguishment time: 13½ sec.
Gallons plain water used: 8.1 gals.

Part II—Ordinary water, high pressure fog.
Material and pre-burn same as Part I.
Extinguishment time: 26 sec.
Gallons plain water used: 13 gals.

Part III—Treated (wet) water, low velocity fog.
Material and pre-burn same as Parts I and II.
Extinguishment time: 8⅓ sec.
Gallons wet water used: 5.1 gals.
Observations: In Parts I and III, 1½-in. D.J. cotton rubber-lined hose and Navy type fog nozzle used with 110 PSI Pump pressure. High pressure fog, using H.P. gun nozzle, at 600 PSI—N.P.

TEST NO. VIII.

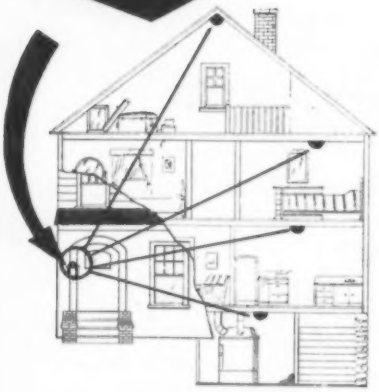
Part I—Ordinary water, low velocity fog.
Material: 5 gals. benzol floated on water in small earth pit.
Pre-burn: full involvement of surface.
Extinguishment time: fire was not extinguished.

Part II—Treated (wet) water, low-velocity fog.
Material and pre-burn, same as Part I.
Extinguishment time: 13 sec.
Gallons wet water used: 7.8 gals.
Observations: low-pressure fog and ordinary water, failed to extinguish fire. No high-pressure test made. Treated water appeared to blanket surface better than plain water fog. In both tests, 1½-in hose and Navy-type fog nozzle used. Pump pressure, 110 PSI.

The ON WATCH FIRE ALARM

The On Watch Fire Alarm System is attached to the outside of a building. Detectors are placed in various parts of the building where fire is most apt to start. When the fire or heat comes in contact with the detector, the alarm goes into action on the outside of the building both audibly and visibly. Therefore, read the following recommendations:

For a good Fire Prevention example, equip your own fire-house.



THE National Board of Fire Underwriters in their 1947 edition of the book entitled, "Suggested Fire Prevention Ordinance" on page 86, item 1901, stated, "That certain places shall be provided with an approved automatic heat-actuated alarm system connected to an outside gong or central station."

Fire Chief Walsh of New York City, on December 7, 1945, in a letter stated, "I shall accept an electrically operated thermostatic detection system that will provide a visible and audible warning on exterior of a building. This shall be accepted in lieu of more expensive alarm systems."

The On Watch System when properly installed by your own electrician will prevent a delayed alarm, for the system is always on watch.

Any further information will gladly be furnished. Inquiries invited from dealers and distributors.

Immediate Delivery

Price $99.25 . . . F.O.B., N. Y. C.
(Including 3 Detectors)
Extra Detectors, $3.75 each

O'LEARY'S FIRE PREVENTION CO., INC.
126 EAST 44th STREET - NEW YORK 17, N. Y.

TEST NO. IX

Part I—Ordinary water, high pressure fog.
Material: 5 gals gasoline, floated on water in large pit (7 x 10 x 1 ft.).
Pre-burn: full involvement of surface.
Extinguishment time: 13⅘ sec.
Gallons ordinary water used: 6.7 gals.
Part II—Treated (wet) water, low velocity fog.
Material and pre-burn same as Part I.
Extinguishment time: 21⅘ sec.
Gallons wet water used: 12.9 gals.
Observations: On Part II test, 1½-in. D.J. cotton, rubber lined hose and Navy type fog nozzle used. Pump pressure 110 PSI. On high-pressure fog test (Part I) 600 PSI-NP.

TEST NO. X.

Part I—Treated (wet) water, low velocity fog.
Material: 25 gals. fuel oil floated on water.
Priming: gasoline Pre-burn: full surface involvement (3-min.).
Extinguishment time: 8 sec.
Gallons wet water used: 4.8 gals.
Observations: Mechanical difficulties prevented comparative tests. Hose used was D. J. cotton rubber lined 1½-in with Navy type fog nozzle. Pump pressure: 110 PSI. In this test, the fuel oil was mixed with residual gasoline from the preceding test. Amount of extinguishing agent used. .05 gals. per sq. ft. of surface area.

World Wide Fire News

By Roi B. Woolley

Peace—It's Wonderful!

Dr. Johannes Schmidt, the German scientist, reported mainly responsible for the development of Germany's first rocket-propelled fighter plane, was one of three persons killed November 14, during the testing of a rocket motor at a top-secret British research laboratory in Westcott, Buckinghamshire, England.

* * *

Normandie Fire Laid to Nazi Spy

According to a story in the France "Amerique," a weekly French language newspaper, published in New York City, a German spy named Fritz Scheffer has confessed to setting the fire that burned the French liner Normandie at her West Forty-ninth Street pier on Feb. 9, 1942.

The newspaper relates that Scheffer is under arrest for murder in Germany. No place or names are given in the account of the events in Gemany beyond the statement that Scheffer confessed when questioned by an Allied intelligence officer.

The self-confessed agent worked prior to the war as a hair-dresser in New York, where the sabotage was said to have been planned. He is quoted as admitting he supervised those who were to set the fire, although he was not the chief of sabotage operations. He is reported to have secured the engagement on the Normandie of one of his men as a boss stevedore and selected a number of workmen-specialists to work with the latter. The ship, according to Scheffer, was guarded neither by the Army, the Navy nor the Coast Guard.

The German agents, according to the report, piled up life-preservers at strategic points after stuffing them with kapok. Then ten men, at a signal, set fire at the same moment to the piles of lifebelts with their welding torches. When the fire had taken well in the grand salon, the torches were directed

THE SIMPLEST
WARNING-IDENTIFYING
SIGNAL FOR VOLUNTEER FIREMEN

RED BEAMS—
Clear the Way!

Clip on a pair of these plastic lenses and you'll get to fires faster —and safer. They fit any sealed beam headlight. Red immediately identifies your car as an emergency vehicle. The lenses will also fit on apparatus that have sealed beam lights. Firemen say they are actually a life saver. Don't take a chance—act today.

* *and the most* ECONOMICAL *only*
$2.95 *pair*

Packed in pairs in individual cartons. Also, AMBER colored lenses for driving in fog. Same price.

ASK YOUR FIRE EQUIPMENT DEALER NOW!

All equipment dealers have them in stock now or will shortly. Call your regular dealer!

HAZELITE INC. 15 PARK ROW, NEW YORK 7, N. Y.

at woodwork chosen carefully so as to be in the air currents from the ventilators and port-holes, according to Scheffer.

* * *

Heaters Cause of DC-6 Fires?

Two, among a number of reported fires in Douglas DC-6 air liners, resulted in the grounding of all such types of planes in November, among them President Truman's new airplane, the Independence.

One of these fires cost the lives of all fifty-two persons aboard a United Air Lines plane, which crashed October 24, as the pilot was trying to make an emergency landing at Bryce Canyon, Utah. The other involved the American Airlines plane which made an emergency landing November 11, at Gallup, N. M., causing injury to the twenty-one passengers and four crew members.

An American Airlines spokesman reported that investigation at the scene of the forced landing "definitely indicates the fire started from a defective cabin heater."

This spokesman said the DC-6s were equipped with a "new and improved" version of the supposedly flameproof, internal combustion gasoline heaters which have long been used on the air line's smaller and slower four-engined predecessor, the Douglas DC-4. He added that the principal trouble encountered in these heaters on the DC-4 had been in "getting them to work when you want them—and now they apparently work too well."

The Gallup fire, he said, started after the plane's stewardess had turned off the heater when the passengers complained of being too warm and then turned it on again after they were getting chilly. Because it has been established that the fatal United Air Line's DC-6 fire started in the same section of the plane as the fire in the American's plans, this informant said, investigators are convinced the two fires started from the same source.

* * *

Hot Off the Foreign News Ticker

The Dutch freighter "Alpherat" arrived in Hongkong, November 13, with two holds flooded in controlling a fire. . . . Sixty Australians lost their personal belongings and Christmas purchases November 15, when a two-story barracks in the A.A.A. Australian Field Battery area at Hiro, Japan, was destroyed by fire. There were no casualties. . . . From Nashua, N. H., comes the story that French Canadians who drop down to visit relatives in that city are a constant nuisance to Nashua firemen. Mail boxes in Canada are a bright red. Visitors from the Dominion persist in trying to mail their letters in Nashua fire alarm boxes. . . . At Searsport, Me., Major Kenneth G. Smith, World War II ace, went to his death with his falling plane rather than let it ram the little village. Major Smith, who downed six German planes, was killed when his Thunderbolt crashed into a stream bed, exploded and burned. Witnesses say he stayed at the controls until the fighter was clear of any buildings but he was unable to parachute before the craft hit. . . . The city of Evanston, Ill., suffered a mysterious Sunday explosion, the origin of which to date has not been determined. The blast, accompanied by fire, was heard and seen in the 1100 block of Forest avenue. Police searched the area, but no trace of anything seared or burned was found.

* * *

Another Japan Munitions Blast

An Army officer, seven enlisted men and seven Japanese were injured in a series of tremendous explosions which destroyed an ammunition dump at sprawling, isolated Ikego, twenty-eight miles from Tokyo, on November 18.

Following the first explosion at 10:00 A.M., blasts rocked the countryside for two hours as a roaring fire touched off big piles of mortar shells. Destroyed were about 4,000 tons of grenades, shells and bullets, according to Eighth Army Headquarters.

Telephone communications were cut off "because of the emergency" and rescue squads were delayed in reaching the injured. The most seriously injured of the enlisted personnel was a driver of an ambulance, whose vehicle plunged over an embankment, while he was rushing to the scene. It is reported there were 400 American personnel stationed at the depot.

* * *

Ban on Shipment of Flash Lamps

The General Electric Company has banned all air shipment of photoflash lamps, except one primer type, "in the general public interest in the matter of air safety."

In a bulletin, the company said, "Recent experiments have established that photoflash lamps, with the exception of the primer type (SM), can be ignited by high-energy, short-wave, electromagnetic radiation, such as is encountered

Easily carried by two men –

THE DUAL FIRE FIGHTER quickly gets to the water and delivers the water to the fire

When the big truck pumper cannot get to a source of water due to obstructions or other reasons the Gorman-Rupp Dual Fire Fighter is quickly carried to the water by two men – it weighs only 150 pounds. By means of a simple, never failing exhaust priming device the pump is primed in from 15 to 30 seconds and water starts flowing through the hose lines.

Used for relaying water to the truck pumper it will deliver 175 gallons over a 30 to 50 foot hill through 300 feet of 2½ inch fire hose. This will supply four ⅜ inch nozzles, each delivering about 40 gallons at 90 pounds.

When fighting fires direct it will throw 100 gallons at 70 pounds or 80 gallons at 80 pounds pressure.

It may also be used for dewatering purposes, thus saving the expensive truck pumper from possible costly damage. Any damage to the Dual Fire Fighter is quickly and easily repaired with common tools.

Write for our bulletin FD-3.

Some territory open for live distributors.

THE GORMAN-RUPP COMPANY

BOWMAN STREET · MANSFIELD, OHIO

from radar transmission." The bulletin forbids all warehouses to ship such lamps by air and applies the ban to orders specifying air shipment.

It further instructs its dealers that free-lance, magazine, newspaper and other photographers should be warned of the hazard. Inquiry of the air lines thus far reveals that no steps have been taken to search baggage or otherwise bar photoflash lamps from planes.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of November, 1947.

Month Ending November 30, 1947

Los Angeles, Cal.—Imperial Chair & Divan Co. plt. destroyed.
New York, N. Y.—Doll factory damaged.
Selinsgrove, Pa.—Administration bldg. of Susquehanna University destroyed.
Kittanning, Pa.—Whse. of Atlantic Refining Co. destroyed. Explosion.
Omak, Wash.—Logging trucks and equip. of Biles-Coleman Lumber Co. destroyed.
Lewiston, Ida.—Duthie Seed Co. elevator, whse., destroyed.
Salem, Ore.—Five-story Guardian office bldg. destroyed.
Brantford, Ont.—Bldgs. on Cleland farm destroyed.
Weirdale, Sask.—Poolroom, two restaurants, two genl. stores, a whse., two granaries and a house, destroyed.
St. Catherines, Ont.—Seigel's Shoe Store, damaged; C. Wallace Co. branch store and eight apts. also damaged.
Toronto, Ont.—Whse. occupied by Armstrong Cork & Insulation, Arrow Bedding and W. J. Gage Stationers, destroyed.
St. Paul, Minn.—Happy Hour Cafe damaged.
Mt. Ulla, N. C.—Mt. Ulla Flour Mill destroyed.
Osborn, Ohio—YMCA bldg. destroyed.
Allendale, S. C.—Salkehatchie Lumber Co. plt. damaged.
Marshfield, Ind.—Ura Seegar grain elevator destroyed.
Westfield, Ind.—Regal Grocery, Community Press printing office, Cresson Antique Shop and Statzer Electric Shop destroyed.
Penn Yan, N. Y.—The basket-making plt. of the Barden & Robeson Corp. destroyed.
Tonawanda, N. Y.—Eighty-foot cracking tower, the Frontier Oil Refining Corp. plt., damaged.
Nashville, Tenn.—Bldg. housing Friedman Electric Co., Jackson Fruit Market, Vandy Shoe Rebuilders and Jake the Tailor, destroyed. Defective flue in fruit store.
Long Beach, Cal.—Porter Hardware Co. store damaged.
Omaha, Neb.—Leflang Bldg., downtown section, destroyed.
Cambridge, Ohio—Office of Continental Can Co.'s plastic div., destroyed.
Cleveland, Ohio—A. & P. supermarket destroyed.
Philadelphia, Pa.—Morrison Tire Co. plt. damaged. Adj. Franklin Auto Repair Co. damaged.
Philadelphia, Pa.—Pioneer Paper Stock Co. destroyed.
Moncton, N. B.—Canadian Legion Hut destroyed.
Vineyard Haven, Mass.—Airplane hangar at Martha's Vineyard Airport, destroyed.
Titusville, Pa.—Hardware store and dwelling of Percy Ashton, Cozy Corner gasoline station and restaurant of A. R. Thompson and dwelling of Clark Beers, damaged.
Bluefield, W. Va.—Belcher Lumber Co. dimension mills destroyed.
Linden, N. J.—Shuffleboard Corp. destroyed.
Philadelphia, Pa.—Eight houses destroyed.
Radford, Va.—Dixie Inn, a hotel, and five business houses, destroyed.
Nampa, Ida.—Forbidden Palace, Alibi Inn, destroyed. Explosion.
Montreal, Que.—Eastend plt. of Commercial Alcohols, Ltd., damaged.
Burbank, Cal.—Reed Battery Co. plt. destroyed. Ignition of inflammable material.
Enfield, Conn.—Dairy barn at Connecticut State Prison Farm destroyed. Short circuit.
Lafayette, Ind.—Moore & Kemple hardware store destroyed.
Des Moines, Ia.—Western Auto Supply store destroyed. Defective oil furnace.
Three Rivers, Mich.—Four summer homes, Klinger Lake, owned by Herald Walters, Waldo Debolt, Herschell Davis and Klinger Lake Country Club, destroyed. Summer home of Guy L. Thomos damaged.
Providence, R. I.—Recreation Center and steak

READY INSTANTLY WHEN YOU NEED IT!
that's the
Scott Air-Pak
SELF-CONTAINED BREATHING APPARATUS

The moment the alarm is given—be it a Fire Gong—a Mine Disaster—an Underwater Tragedy—an Industrial Emergency—the Scott Air-Pak is *READY* for instant use.

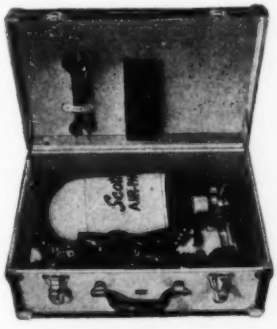
Donned in less than a minute, the Air-Pak is ready for rescue or protective duty—immediately. No lengthy make-ready time while precious minutes elapse.

And its fresh, cool air gives confidence to the user.

Distributed by leading Safety Equipment Houses from Coast to Coast.

NO OTHER BREATHING APPARATUS HAS ALL THESE VITAL ADVANTAGES

1. A quick-connect that cannot be cross threaded easily and quickly engaged.
2. All-purpose working equipment—not just rescue apparatus.
3. A regulator—proved by thousands of hours of usage.
4. Fresh, cool air—not oxygen.
5. No complicated training or practice needed.
6. Absolutely clear lenses—no fogging.
7. A gauge *specifically designed* to provide a constant check on available air supply under all conditions.



Bureau of Mines Approval No. 1308

...BREATHE FRESH, COOL AIR IN EVERY BREATHING HAZARD

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
215 ERIE STREET, LANCASTER, N. Y.

Established in 1932
Scott
FOR SAFETY—FOR SERVICE

"THERE CAN BE NO COMPROMISE WITH QUALITY WHEN A LIFE IS AT STAKE"

house, supermarket and liquor store, destroyed. Explosion.

Anton, Tex.—Whse. of Farmers of Co-Operative Gin, cotton yard and cotton, destroyed. Sparks from gin machinery.

Cambridge, Md.—Pilgrim Holiness Church; Harvey Wilson beer storage whse.; wholesale grocery store of J. E. Andrews & Co., and a wooden shed destroyed.

Beverly Farms, Mass.—Dwelling of Hugh C. Ward destroyed.

Edmonton, Alta.—Heintzman & Co. furniture mfrs., damaged.

Picton, Ont.—St. Andrew's Presbyterian Church destroyed. Defective wiring.

Kingsburg, Cal.—Kingsburg Mfg. Co.'s planing mill and lumber yard, Golden State Highway, destroyed.

Atchison, Kan.—First Church of Christ, Scientist, destroyed.

Corvallis, Ore.—Cefir Timber Co. plt. destroyed.

Duparquet, Que.—The three-story Goldfield Hotel damaged.

Ogdensburg, N. Y.—St. Mary's Cathedral destroyed.

Snokomish, Wash.—Columbia Packing Co. damaged. Spontaneous ignition.

Copetown, Ont.—Feed mill destroyed. Box car owned by Canadian National Railways also destroyed.

Halifax, N. S.—Halifax-Dartmouth vicinity damaged.

Conway, Ark.—Training School Bldg. on campus of Arkansas State Teachers College destroyed.

Louisville, Ky.—Boston bldg. occupied by Florsheim Shoe Co., Emory's baby and junior shop, Busath's candy shop, several beauty shops, photography studios, offices and apts., destroyed.

Marion, Mich.—Michigan Gas Storage Co. pumping station destroyed. Explosion.

Buffalo, N. Y.—Business block in Delaware Avenue damaged.

Buffalo, N. Y.—Kenmore Theatre bldg. damaged.

North Tonawanda, N. Y.—Plt. of Frontier Fuel Oil Corp. damaged. Explosion.

Norman, Okla.—Geology and chemistry bldg. of University of Oklahoma destroyed.

Coatesville, Pa.—Grand Hotel damaged. Also damaged within hotel were F. W. Woolworth and J. J. Newberry stores and Kinney shoe store.

Los Angeles, Cal.—Harold Furniture Co. damaged.

Ellaville, Ga.—Ellaville Theatre destroyed. Adj. bldgs. damaged. Oil heater explosion.

Ottumwa, Ia.—Ottumwa country club destroyed.

Cincinnati, Ohio—Towboat "Captain Beatty" destroyed. Ignition of fuel oil.

New Bremen, Ohio—Plt. of New Bremen Broom Co. destroyed.

Willamina, Ore.—Coastal Lumber Co. damaged.

Vancouver, B. C.—Bldg. occupied by former Chinese Theatre destroyed.

Vancouver, B. C.—Lane Radio Store and Apex Venetian Blind Co. destroyed.

Toronto, Ont.—Lacquer dept. of Josephine Dewitt Artificial Flower Co. damaged.

Centre, Ala.—Business district damaged. Losses included Rural Electrification Administration and post office.

Marion, Ia.—Bldg. occupied by Kendall Hardware Store, Kopecky grocery store, Edison drug store, D. A. Stamy insurance agency, lodge rooms and apts., destroyed.

Frankfort, Ky.—Cumberland Falls Hotel destroyed.

Little Rock, Ark.—Roller skating rink and combination grocery and hardware store destroyed.

Detroit, Mich.—Monroe Waste Paper Co. bldg. destroyed.

Columbus, Ohio—Apt. bldg. destroyed.

Tulsa, Okla.—Dept. store damaged.

Adrian, Mich.—St. John's Lutheran School damaged.

Millburn, N. J.—The Brook, a super club, Morris Turnpike, destroyed.

Geneva, Neb.—Bldgs. of Herbert E. Lauber Seed Co., 2½ miles northwest, destroyed.

Toledo, Ohio—Roanoke Hotel damaged; also United Moving & Storage Co., damaged.

Wellsboro, Pa.—Main hangar and six airplanes at Grand Canyon airport, five miles west, destroyed.

Pembroke, Va.—Bldg. occupied by funeral home, furniture and hardware store of Williams Bros. & Co., destroyed.

Glidden, Wis.—Lumber mill of Universal Wood Products Co. destroyed.

Olympia, Wash.—Long Lake Dance Hall destroyed. Cigarette.

Port Alberni, B. C.—King Edward Hotel destroyed.

Little Rock, Ark.—Large one-story bldg., the Sugar Creek Creamery Co. destroyed.

Waukegan, Ill.—Parts Service Co., an auto parts firm, damaged.

Flint, Mich.—Dairy barn on farm of Ethbert Cuthbertson, three miles northwest of Birch Run, destroyed.

Hamilton, Ont.—Plt. of Robert Duncan Printing Co. destroyed.

Minneapolis, Minn.—Natl. Dry Cleaners damaged.

Elkland, N. Y.—Leach House of Elkland Leather Co., destroyed.

Rawlins, Wyo.—Pettigrew Soda Works, 30 miles north, destroyed. Overheated stove.

Toronto, Ont.—Industrial plt. of Salvation Army destroyed.

Brinkley, Ark.—Coca-Cola plt. of Coca-Cola Bottling Co. of Arkansas destroyed.

Boston, Mass.—Freight sheds of Boston & Maine Railroad yard destroyed.

Revere, Mass.—Amusement bldgs., Revere Beach (Square Diamond, Merry-go-round, Palm Gardens and Hurley's Hurdles) damaged.

Akron, Ohio—East Akron Eagles Club and Brown Derby Cafe damaged.

Concordville, Pa.—Wood and metal working establishment of William Colkett and Vernon Parry, destroyed.

Greensburg, Pa.—Main bldg. of Walthour Planing Mill destroyed.

Moorefield, Ont.—Grain elevator destroyed.

Wyoming, Ont.—Bldg. occupied by Dr. M. McKay, George Boyd's Shoemaker store; Atkins and Parnell Grocery; Frank Hayes Butcher Shop; and McManus Petroleums, destroyed.

Tuskegee, Ala.—George Washington Carver Museum destroyed.

Los Angeles, Cal.: Harold Furniture Co. store damaged.

Channel Lake, Ill.—John R. Boyle boat works and R. J. Webb Boat Building Co. destroyed. Defective wiring.

Minnieska, Minn.—Three business bldgs. destroyed.

Beatrice, Neb.—Kimball Laundry and Dry Cleaners destroyed.

Masontown, Pa.—Business apt. bldg. of Hirsch's hardware store destroyed.

Corsicana, Tex.—DeLuxe Bus Service station and garage and K Woolens store damaged.

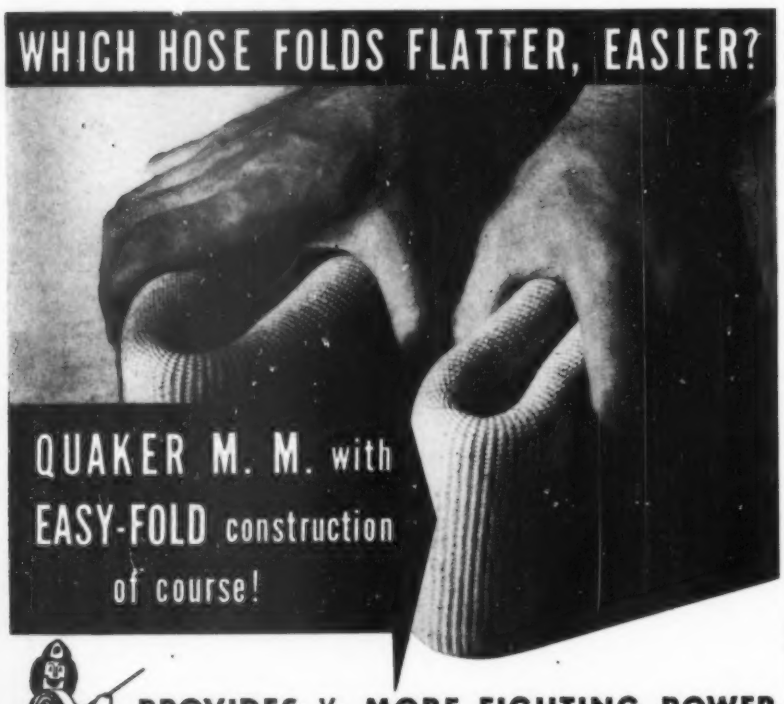
Lucerne, Ind.—James Frushour whse., eight miles north, destroyed.

Worthington, Ind.—Corn storage barn on farm of H. H. Sloan & Sons, 2½ miles south, destroyed.

Hamilton, Ont.—Factory of American Can Co. damaged.

Jonjuiere, Que.—St Michel School destroyed. Furnace explosion.

Ottawa, Ont.—Stein Bros. ladies clothing store; Helen Curtis Cosmetic Supply Co.; National



PROVIDES ⅓ MORE FIGHTING POWER

With Quaker Modern Municipal Hose in Easy-fold construction, you can get 33% *extra footage* into truck beds because it folds flatly, packs compactly, handles easily, yet provides the rugged strength so necessary when fire strikes. That means ⅓ more fighting power to reach the high, out-of-the-way spots, quickly, without delay.

Carefully made by experts, Quaker Fire Hose stays pliable . . . resists abrasion and pressure. Special looms weave the tough multiple jackets for long-lasting service.

For greater security . . . greater economy, make sure it's Quaker Modern Municipal—the ideal hose for cities, communities, and industrial plants who want top dependability. Order a supply today . . . fires won't wait!

"If there's a way to get it done . . . Quaker will do it"

QUAKER RUBBER CORPORATION

PHILADELPHIA 24, PA. • NEW YORK 7 • CLEVELAND 15 • CHICAGO 16 • HOUSTON 1

QUAKER PACIFIC RUBBER COMPANY • SAN FRANCISCO 5 • LOS ANGELES 21

System of Baking; Edelson's Jewelry Store; Tamblyn's Drug Store; Bill Schilling's electrical shop and A. H. Jarvis bookstore damaged.

Toronto, Ont.—Canadian Liquid Air Plant destroyed.

Phoenix, Ariz.—Grandstand at Sportsman's Park destroyed.

Napa, Cal.—Whse. of Switzer Van & Storage Co. damaged.

Greendale, Ky.—Stock and storage barn at Kentucky House of Reform destroyed.

Salisbury, Md.—George Washington Restaurant, Route 13, five miles south, destroyed.

Salisbury, Md.—Edgewood Pipe & Black Co., Delmar Road, 5 miles north, destroyed.

St. Louis, Mo.—Yard of Aaloo Wrecking & Supply Co. and adj. furniture whse. of Union-May-Stern Co. damaged.

Mansfield, Ohio—Mansfield Rapid Transit garage owned by city, destroyed.

Martin, Tenn.—Winstead-Murphy Furniture Co. bldg. destroyed. Shortage in wires to neon sign.

Questions and Answers

Carbon Dioxide Pressure

To the Editor:

I am in need of some information on carbon dioxide extinguishers such as the pressure at which the safety valve ruptures and the pounds per square inch in bottles at different temperatures.

H. R. M.

Answer: The table below gives you the temperatures and pressures of carbon dioxide in standard cylinders.

Temperature Degrees F.	Pressure in Lbs. per Sq. In.
—10	245
0	295
10	345
20	400
32	489
40	550
50	635
60	729
70	834
80	960
90	1190
100	1450
110	1710
120	1980
130	2250
140	2530
150	2810
160	3090

Several types of cylinders are used for fire extinguishers, and the maximum pressure in the various types, before rupture of safety disc, varies.

It is suggested that you drop a line to the Bureau of Explosives, Association of American Railroads, 30 Vesey Street, New York, N. Y., and ask for the requirements regarding carbon dioxide cylinders and rupture pressure for various colors of discs.

Branched Line Calculations

To the Editor:

A pumper is pumping through a single line of 2½-inch hose 200 feet long, and into a reducing wye consisting of two leads, 100 feet long of 1½-inch hose. Both nozzle diameters are ½-inch and nozzle pressure is 45 pounds per square inch.

What will the friction loss be in the 200 feet of 2½-inch hose? What will

What's Your Pumping Problem?
More and more Fire Departments are solving their problems by specifying their fire fighting apparatus WATEROUS Pump-equipped! For three good reasons: (1) Dependable performance is assured through outstanding pump design and high quality materials. (2) Accessibility, simplicity of operation and a minimum of maintenance are Waterous advantages. (3) Sixty-one years of valuable knowhow is behind every WATEROUS Pump.
Your copy of the Waterous Fire Pump Catalog is ready for you. Amply illustrated, it is easy to see why WATEROUS Pumps are selected as standard equipment on so many leading makes of apparatus.
Also manufacturers of WATEROUS Fire Hydrants.
Waterous
Dependable
SINCE 1886
WATEROUS
FIRE PUMPS
WATEROUS COMPANY · ST. PAUL, MINNESOTA

IF FIRE TOOK A HOLIDAY . . .

If Fire "took a holiday" for just one day . . . it would save 27 useful lives and over $1,780,000 in direct property loss. That is the average daily toll taken by fire in the U.S.A.

Perhaps fire *would* "take a holiday" this Christmas and allow fire fighters to enjoy their Christmas at home—if all proper fire precautions were carefully observed by the public.

But past experience has proved that Christmas fires are all too frequent!

We hope that each one of you will enjoy a Christmas unmarred by the sound of a fire siren. But if fire *must* strike in your community, we hope that you are backed up by an efficient, dependable Hale Fire Pump to provide you with plenty of volume and pressure for putting it out with the minimum of time, effort and damage.

Merry Christmas and Happy New Year!

HALE

FIRE PUMP COMPANY

Conshohocken, Pa.

FIRE PUMPS IN ALL STANDARD CAPACITIES

QUESTIONS and ANSWERS *for* LIEUTENANT and CAPTAIN

Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held!

Every ambitious fire fighter needs a copy of this fully illustrated, 310 page book, written by George J. Kuss, Former Deputy Chief, New York Fire Department, and Fred Shepperd, Editorial director of FIRE ENGINEERING.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire-Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

PRICE $2.50 POSTPAID

CASE-SHEPPERD-MANN PUB. CORP.

24 West 40th Street, New York 18, N. Y.

be the friction loss in each lead of 1½-inch hose? What will be the flow in gallons per minute from each nozzle. What would be required engine pressure?

R. L. Y.

Answer: The solution to your problem is as follows:

First find the discharge from each of the 100-foot branched lines. When the discharge is found, then calculate the friction loss in each branch line.

The discharge from a 1½-inch nozzle at 45 pounds is 49.85, or 50 gallons per minute.

The discharge formula is Dis. $= 29.7 \times d \times d \sqrt{P}$, where d is the diameter in inches and P, the pressure in pounds per square inch.

The friction loss in 1½-inch hose at 50 gallons per minute is 9.3 pounds.

The formula for determining this is F. L. per 100 feet $= 40 \times (2 \times Q \times Q + 1/6\ Q) \times C$, where Q is the flow in hundreds of gallons per minute and C, a constant, which for 1½-inch hose is .4.

The flow through the 200-foot line of 2½-inch hose would be equal to the flow from the two 1½-inch lines or 50 + 50, or 100 gallons per minute.

The friction loss in 200 feet of 2½-inch hose at 100 gallons per minutes is $2 \times Q \times Q + ½\ Q$

$= 2 \times 1 \times 1 + ½\ Q$

$= 2½$ pounds.

Then the engine pressure is equal to the nozzle pressure plus the friction loss in the 1½-inch hose plus the friction loss in the 2½-inch hose or 45 + 9.3 + 2.5, or 56.8 pounds.

False and True Statements

To the Editor:

The following "False and True" statements in the "Fire Chief's Handbook" have aroused considerable discussion in our company and I would appreciate your explaining them.

1. Exposure hazards never exist in fireproof buildings.
2. Gases are sometimes heated to a temperature higher than that of ignition.
3. When hot air rushes downward it is immediately followed by cold air.
4. In buildings having elevators, the employees upon leaving at night always close elevator shaft doors.

E. S.

Answer: The questions will be answered in the order in which they were given.

1. Exposure hazards do exist in fireproof buildings, where openings are provided for fire to travel to adjoining buildings, through the roof to adjacent buildings or from one floor to the other where improper fire stops are provided over vertical openings.

2. Yes, gases are sometimes heated to a temperature higher than that of ignition, which is proved by the extension of fire through convection by hot gases from one floor to another of a building. If the gases rising in a structure were lower in temperature than the ignition point of the materials in the structure above, fire would not be carried upward.

3. If hot air rushes downward in a

building, it is followed by cooler air, but we question very much whether hot air could be made to rush downward in a structure. It is continually pushing upward, due to its buoyancy, or lighter weight than the surrounding air.

4. It would be fine if employees upon leaving a building at night always closed the elevator shaft doors, but there are too many cases on record where doors have been left open to make this statement "true."

Persons in the News

Harry Pusch Dead

Harry Pusch, "fire buff" and former president of the Fire Bell Club of New York City died November 2, 1947, after an illness that had incapacitated him for some time.

In his business life, Harry Pusch was connected with the New York, New Haven & Hartford Railroad, for many years as assistant manager of passenger traffic. Every spare moment, however, was devoted to his avocation, the fire service, and particularly the New York Fire Department. During World War II he served as an Auxiliary Fire Alarm Telegraph Dispatcher.

His rare talents as a raconteur, wit and good fellow endeared him not only to those of the fire service with whom he came in contact, but with the great fraternity of serious "fire buffs" as exemplified by the organization which he helped found, and which he headed until his failing health forced his retirement. He is survived by his wife, two sons and a daughter.

Asst. Chief W. C. O'Malley Dies

Asst. Fire Chief William C. O'Malley, a member of the Bridgeport, Conn., Fire Department for 29 years, died in St. Vincent's Hospital, that city, on

W. C. O'Malley

November 11, from first and second degree burns received while fighting a $50,000 blaze in the Universal Sign Company's plant, Railroad Avenue.

Chief O'Malley was trapped on the second floor of the burning building when exploding gases caused a flash fire, setting his clothing ablaze. An in-

Chief POWHATAN

AND ALL HIS WARRIORS EXTEND TO EACH OF YOU

Holiday Greetings

Since 1892 Chief Powhatan has successfully served Fire Departments with well constructed fittings.

We look forward to serving you in 1948

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

BRAXMAR BADGES

Standard for over 67 years

THE BEST BADGE MONEY CAN BUY

BRAXMAR BADGES STANDARD WITH FIREMEN FOR 67 YEARS—WE CAN NOW SUPPLY NICKEL AND CHROME.

If you have not yet received our latest circular. We'll be glad to mail one on request.

BRAXMAR BADGES

JOHN O. VEIT
President

C. G. BRAXMAR CO., Inc.
242 W. 55th Street, New York 19, N. Y.

vestigation of the fire disclosed that the blaze apparently began in a small boiler room on the west side of the two-story frame building.

Appointed to the Fire Department on April 1, 1918, Asst. Chief O'Malley was one of the city's best known firefighters. He was an Assistant Chief since 1943. Before that time he served as a Captain for five years and as Lieutenant from 1921 to 1939.

Full Department honors were accorded Chief O'Malley at his funeral which took place November 14 from his home, 3034 Main Street and from St. Patrick's church, Bridgeport. Burial was in St. Michael's Cemetery.

Firefighter John Horahan, driver for Asst. Chief O'Malley, was overcome from gas fumes at the same fire and was taken to St. Vincent's Hospital. He was discharged from that institution on November 22.

TOM MAGNER

Joseph Horan Killed

Joseph Horan of the Horan Bros. Fire Apparatus Co., Syracuse, N. Y., was killed in October when a demonstration engine he was driving crashed into a tree at Bridgewater, N. Y. The truck, a converted high pressure unit, was demolished. It was valued at ten thousand dollars.

W. E. Mallalieu Operated On

W. E. Mallalieu, general manager of the National Board of Fire Underwriters, was rushed to the Jersey City Medical City on November 17, for an emergency appendectomy.

It was announced by A. Bruce Bielaski, assistant general manager of the National Board that the operation was successful and Mr. Mallalieu was confined to the hospital only for a few days.

Lexington's New Chief

Shelby D. Armstrong, 64, a member of the Lexington, Ky., Fire Department for the past forty-one years, and first assistant chief since 1944, was appointed Chief of the Department November 1, 1947, to succeed Chief Louis A. Travis, who died late in October.

Chief Armstrong joined the Lexington Fire Department April 10, 1906, and was made drill captain in 1917. He was promoted to third assistant chief in 1928, to second assistant in 1930 and to first assistant, March 1, 1944.

It is reported that T. C. Doyle and T. H. Bowman, second and third assistant chief respectively are in line for promotion as a result of Chief Armstrong's appointment.

George Elliott Takes Important Sprinkler Post

Mr. George W. Elliott has been appointed Executive Director of the National Automatic Sprinkler and Fire Control Association, New York City.

Mr. Elliott has been active in fire protection and fire prevention for thirty-seven years. He was Fire Marshal, and later, Director of Public Safety of Philadelphia, Pa., and he served as Vice President and President of the National

FIREMEN'S UNIFORMS

BADGES
CAPS
INSIGNIA

Manufacturers of uniforms for over 50 years

RUSSELL UNIFORM CO.
1600 Broadway, New York 19, N. Y.
Write for Fire Dept. catalog No. 55

FOR PROGRESSIVE FIRE FIGHTERS

A 254 page book, 185 illustrations, cloth bound, by Fred Shepperd, Editorial Director of FIRE ENGINEERING.

Brings thoroughly up-to-date the subject of hydraulics as it pertains to every phase of fire-fighting — in simpler, more understandable and more complete form than ever. Not only that, it embraces, as well, many important new angles that have never before been covered anywhere. There are several brand new formulas, originated by Mr. Shepperd, and even old ones have been simplified or revised for greater accuracy.

"Fire Service Hydraulics" is a book every progressive fire fighter from the Chief down needs and should have.

Price $3.00 Postpaid

CASE-SHEPPERD-MANN PUB. CORP.
24 West 40th Street, New York 18, N. Y.

Fire Protection Association. He is at present, Chairman of its Board of Directors. For years he has been identified with the National Safety Council and he is now Chairman of the Executive Committee of the National Fire Waste Council. He was at one time General Secretary of the Philadelphia Chamber of Commerce and, at the time he entered the sprinkler industry, he was serving as Assistant to the President of the Philadelphia Chamber of Commerce.

In his years of promoting fire control, George Elliott has always advocated the automatic sprinkler as "the best friend of the fireman." With members of the Association, he is fond of quoting the former Chief of the Worcester, Mass., Fire Department, Charles McCarthy, who used to say that when he drove up to a fire and heard the sprinkler gong ringing he always had a feeling of relief for he knew that he wasn't going to lose any firemen in that fire and that he didn't have a potential conflagration on his hands.

Past-Chiefs of Grass Valley Honored

Past fire chiefs of the City of Grass Valley Fire Department, Grass Valley, Calif., were honored at a dinner November 15, 1947, sponsored by their Fire Department, with over 400 city and county officials, fire officers and men in attendance from Nevada City, Auburn, the City of Smartville, Colfax and the City of Grass Valley.

The dinner was held in the Elks Building, Grass Valley, with Fire Chief and Chief of Police Henry Strick master of ceremonies.

Oldest past-chief in point of service in the Grass Valley Fire Department is Ralph Vincent, who was chief in 1915. Others who were honored were: Former chiefs Leroy Bond, 1924; Irving Sims, 1925; William Sproul, 1926-27; James Oliver, 1928; Edward Nankervis, 1930; Harold Hutchison, 1931; Peter Daley, 1934; Ernest Penrose, 1937; Leonard Frank, 1938; Jack Garrison, 1940; Allison Simmon, 1944; Clain Hughes, 1945; Les Clogni, 1946. Ex-fire chief Albert Abrahams, who was ill, was brought to the dinner in an ambulance. Former chief Harold Whiting, who was killed in action during World War II, was honored in absentium.

Among the guests was Fire Chief Dr. C. W. Chapman, who was signally honored last July in recognition of sixty-five years' service with the Nevada City Fire Department. (Thanks, VICTOR P. BARTLEY)

Appointments and Promotions

GARRETSON, S. D.—L. M. Eitreim, chief.

SPRINGDALE, ARK. — Milo Washburn, chief.

E. ANN ARBOR, MICH.—Joseph Alef, chief, police and fire.

CARTHAGE, S. D.—Gilbert Gales, chief.

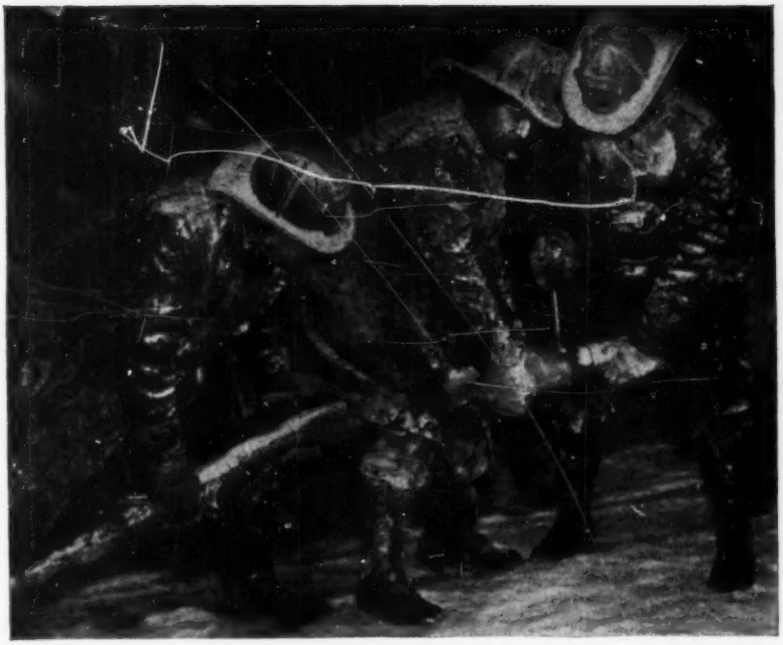
NEENAH, WIS.—John Zick, chief.

WINDSOR, PA.—Lawrence Kinaro, chief.

MILTON, IND.—Harry Murley, chief.

FORT DODGE, IA.—Harry R. Brown, former assistant chief, named chief, to succeed R. H. Grant, who resigned.

LOUISVILLE, KY.—L. A. Demunbrun of Brownsville, Ky. appointed State Fire Marshal, succeeding Clyde Smith.



Serves Best . . .

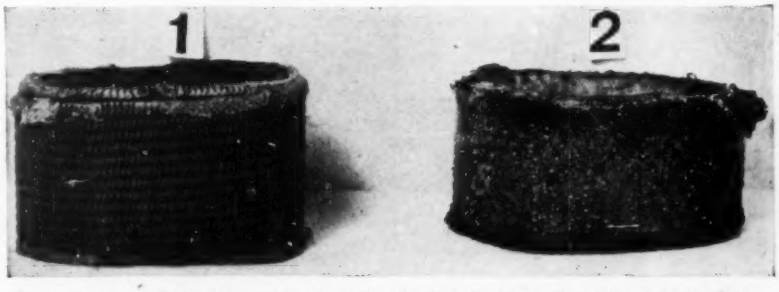
. . . Where Conditions Are Worst

MANHATTAN

RADIO-ACTIVE TREATED FIRE HOSE

In freezing weather Manhattan's Radio-Active Treated Fire Hose stays flexible—USEFUL. Manhattan has developed a way of treating fire hose cotton jackets with certain salts of rare earth metals, having radio-active properties that repel water and moisture. This treatment doesn't wear off—it lasts for the life of the hose.

Radio-Active Treated Hose doesn't get water-soaked, doesn't require drying out. Folds flat and is always ready to use. Manhattan is the *sole manufacturer* of this patented Radio-Active Treatment.



Pieces of "treated" fire hose—after 3 months identical incubation tests. No. 1 is Manhattan Hose treated by the Radio-Active process. No. 2 has had ordinary mildew-resistant treatment. No. 2 had lost nearly 80% of its original strength.

RAYBESTOS-MANHATTAN INC.

Keep Ahead with Manhattan

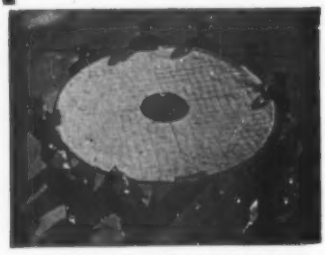
MANHATTAN RUBBER DIVISION PASSAIC, NEW JERSEY

In the Fire Service—

THERE'S NOTHING "JUST AS GOOD"

The fire service prides itself on buying "the best," everytime. *INSIST* on *ATLAS*—everytime—and you'll get the *best* life net!

ATLAS LIFE NETS

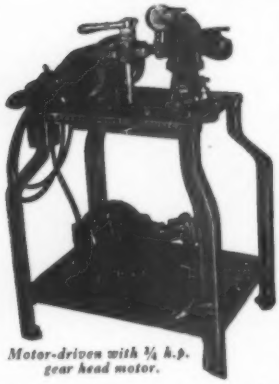


ATLAS SAFETY EQUIPMENT CO. INC.

27 WARREN ST. NEW YORK 7, N. Y.

FOR THE PROPER CARE OF YOUR FIRE HOSE

DAYTON POWERDRAULIC EXPANDER



Motor-driven with ¾ h.p. gear head motor.

★ Expands couplings from ¾" to 6" size.

Tests hose up to 700 lbs.

Extra attachment removes old expansion rings from old couplings. No manual effort needed.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

MORE PRESSURE - LARGER MOTOR
ROOMIER WORK TABLE
REPLACEMENT SEGMENTS (ALL SIZES)
FOR ANY OLD HYDRAULIC EXPANDER

SEND FOR ILLUSTRATED BULLETIN

DAYTON FIRE EQUIPMENT CO.

1242-48 W. 2ND ST. - DAYTON 7, OHIO

TRIBES HILL, N. Y.—Former chief Matthew J. Kavanaugh was elected mutual aid coordinator of the Montgomery County Volunteer Firemen's Association and Francis J. Jobin was re-elected president, at the recent meeting in Tribes Hill.

BUCKEYE, IA.—D. D. Walker, of Buckeye, was named president of the Hardin County (Iowa) Firemen's Association at the recent meeting held in Iowa Falls.

HARTSDALE, N. Y.—B. Richter Townsend, former chief and fire commissioner of the Hartsdale Fire Department, assumes the presidency of the Fire Chiefs Emergency Plan of Westchester County for the third term.

CHARLESTOWN, W. VA.—L. A. Stanley was elected president of the West Virginia Volunteer Firemen's Association at its 19th annual convention, in Charlestown.

DOVER, O.—Clarence J. Shilling named acting chief.

KENT, O.—Fred Miller, assistant chief, Kent Fire Department, was elected president of the Portage County Firemen's Association.

HARTSDALE, N. Y.—Clifton B. Nichols, was certified for position of fire chief and James Birmingham for assistant chief.

SANTA ANA, CAL.—Elmer Gates appointed acting fire chief, in absence of Chief John Luxembourger, due to illness.

Captains John P. May and Percy M. Searles of the Bridgeport, Conn., Fire Department have been promoted to Assistant Chiefs in the Department. They were two highest remaining names on the list following civil service examinations for the post. Both have come up from the ranks.

The Round Table

(*Continued from page* 877)

training sessions for officers apart from the rank and file. Each officer is required to take a sixty-hour course of instructions in order to learn how to teach. An instructor from one of the local colleges usually handles these classes.

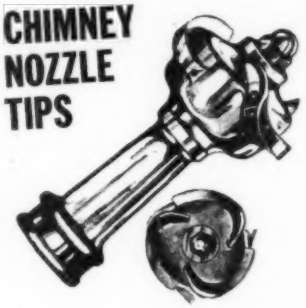
We do not give any special credits to officers attending officers school as attendance is mandatory. These officer schools are in session while the men are on duty, therefore the classes are small. Just recently all officers were required to go through all evolutions at the drill tower and also pump operations so that all officers would be teaching alike. Each captain is required to drill and hold classes at his station. He must show at least 16 hours on his monthly report.

We sincerely think that having these periodical classes for officers only helps them stay out of a rut. We also have quarterly conferences with all chief officers at one time, both on and off duty. Another good thing that should help is the formation of an Officers' Club, which we contemplate doing soon. We are also preparing a training manual for officers only.

Henry G. Thomas, Chief, Hartford, Conn.: We have no organized school for fire officers apart from our regular, all year, training program. From time to time we have had conferences for strictly officer groups and hope to enlarge on this program.

When the weather closes our outdoor season, our full-time drill master devotes his full time to company instructions.

CHIMNEY NOZZLE TIPS



FOR QUICK CONTROL OF CHIMNEY FIRES WITHOUT PROPERTY DAMAGE

Free revolving head with three boring spirals effectively spreads mist, loosens soot and blankets the fire. Provides most effective control with a minimum amount of water. Eliminates possibility of water damage to chimney or furnace. This exceptionally useful "TRUMPET" nozzle is threaded for ¾" and 1" hose lines for attachment to discharge end of 1" or 1½" Shut Offs.

Get complete information now. Write:

THE WOOSTER BRASS COMPANY

WOOSTER OHIO

Extending the

Season's Greetings

to the Fire Fighters of America

HERE'S a new item — *SEALED BEAM Flashing Warning Light.* This light is similar to the Flashing Warning Light shown on page 68 of our No. 43 catalog except that it is equipped with a Sealed Beam light.

Available for immediate delivery from stock—a limited quantity of DETROIT DOOR OPENERS. . . . Send in your order immediately.

Catalog No. 43 sent on request.

Other items in stock:

GLOBE COATS
REGULATION BOOTS—COATS
FOG NOZZLES
WOOL FIRE BLANKETS
FIRE BROOMS
INDIAN PUMP TANKS

FYR-FYTER PRODUCTS
63 Park Row · New York

This is carried on in the company stations and includes classroom discussions and fire prevention work. As a part of this work the drill master, a deputy chief, confers with the company officers, discusses their problems, helps them plan their drills, talks over the mistakes of past fires and the means of correcting them. The occupancies, structural conditions, ways of entry and the fire protection of buildings in an officer's district are all gone over.

The drill master is really the liaison officer between the chief and the companies. The other chief officers meet with the chief daily.

In my opinion, a department training program should include officer training, quite apart from that given the men, but closely related thereto.

Robert L. Woolard, Chief, Norfolk, Va.: A modern two-piece station with auditorium for fire college work and also a modern drill tower will be completed in July, 1948. State fire schools and instructors courses will be conducted here. Special schools and training courses will also be conducted for officers of the fire division.

Officers will receive certificates after schools and training courses have been completed.

At the close of the school session, officers will be required to stand examinations and be graded. Certain grades on their papers will be required for certificates.

I would suggest a meeting with officers every 30 days, conducted by chiefs of their respective districts and other chiefs in attendance. Talks should be given on modern methods of fire control and extinguishment and other fire department work in general, such as high fire losses in this country. Fire prevention work, salvage, etc., also any suggestions that may improve the present conditions in the work of the department should be included. Meetings of this nature will create interest and improve the efficiency of the department as the officers feel that they are taking part in building up the morale and efficiency of the department. They will also assume their responsibility in their respective capacities. Meetings of this nature were put in effect in our department on January 1, 1947.

J. H. Burke, Chief, Oakland, Cal.: We had an officers school in the department some time ago, but it has not been in operation for several years. However, officer training is to be resumed under State instructors after which our own school will be reorganized.

When our school is re-organized it will have to be on a voluntary basis. Those attending will receive credits which will give them an advantage in promotional examinations. This, I believe, will force others to attend.

Credits for attendance at officers school, rigid promotional requirements, strict inspections, departmental efficiency ratings, etc., will suffice to keep officers interested. If not, other means will be adopted.

C. W. Ogborn, Chief, Columbus, Ohio: We had fully intended to start an officers school this Fall and Winter and had gathered together quite a bit of information with which to start. However, the people voted a 40-hour week for firemen which took effect

TRADE MARK

MECHANICAL FOAM

FIRE OUT... Stays OUT!

The all-climate, dependable

MECHANICAL FOAM PRODUCING LIQUID

It flows — covers — seals — extinguishes

» » » Highly effective on oil and gasoline fires—

» » » Use with any kind of water—at any temperature—in all makes of equipment.

Write for descriptive bulletin

THE MEARL CORPORATION

153 Waverly Place, New York 14, N. Y.

"CENTRAL" HAS A RECORD FOR DEPENDABILITY

500 G.P.M. Triple Combination Equipment Mounted on Commercial Chassis.

FROM THE SMALLEST TRUCK TO THE LARGEST CUSTOM BUILT PUMPER — CENTRAL DESIGN AND CONSTRUCTION LEADS THE FIRE APPARATUS FIELD

CENTRAL FIRE TRUCK CORPORATION

4437 MANCHESTER ST. LOUIS 10, MO.

Write for our new 62-page catalog

November 17, 1947. This forced us to close four houses and even then our companies have to run with three or four men. We took everyone on the civil service list which numbered 30, and expect the commission to hold another examination soon. If we can get enough men to fil the houses that are open, we will undoubtedly start an officers school.

William C. Garvin, Chief, Yonkers, N. Y.: While we do not conduct a special school for officers, we require all officers to attend a round table discussion at fire headquarters once a month under the supervision of the assistant chief. Departmental problems and subjects are discussed with a view of improving efficiency.

We encourage the men to read trade journals, and bulletins issued by the National Board of Fire Underwriters. Where it is possible, we have these furnished free to each company.

I believe that the department should hold clases for members interested in studying for promotional examinations. These should be under the supervision of the assistant chiefs.

Frank S. Sandeman, Chief, Long Beach, Cal.: We have upon several occasions in the past conducted schools for officers as part of on-the-job training. Some of the subjects were the technique of teaching, fire department hydraulics, job analysis and training and other specialized courses conducted during the war such as chemical warfare, taught by one of our own officers who later became a lieutenant colonel in the Chemical Warfare branch of the Army. Arrangements are now being made for additional in-service training for officers by the California Department of Education.

No reward is given by the Department for attendance at these classes since they are conducted during duty hours. Credits are given by the Long Beach School System for classes attended by all members including probationary firemen going through the drill college training period. For a course consisting of a 20- or 30-hour period, a certain number of high school credits are given. Several men have secured high school diplomas through this method, enabling them to gain enough credits for further educational advantages offered by colleges, etc.

Officers' meetings are held at regular intervals with the assistant chief of each platoon conducting the meetings. We have had success by rotating the battalion chiefs of each platoon who act as discussion leaders. It is often difficult to "draw" the captains out during an officers' meeting, but with the right leadership no one is "put on the spot". In this way all officers take an active part in constructive criticism.

We frequently delegate the drill instructor or fire prevention engineer (fire marshal) to attend various classes conducted by universities such as UCLA or USC on subjects pertinent to fire department operation, such as fire prevention courses, driving instruction, arson investigation, etc. The information gained by these members is at once relayed to the remainder of the department before it gets "cold".

We believe it a good policy to

HEDBERG
SUPER SIRENS
"THE WORLD'S BEST BY TEST"
SINCE 1920

WRITE FOR DESCRIPTIVE MATTER DESCRIBING THE NATION'S MOST OUTSTANDING WARNING SIGNALS.

THEY SMASH THRU TRAFFIC LIKE ARTILLERY FIRE

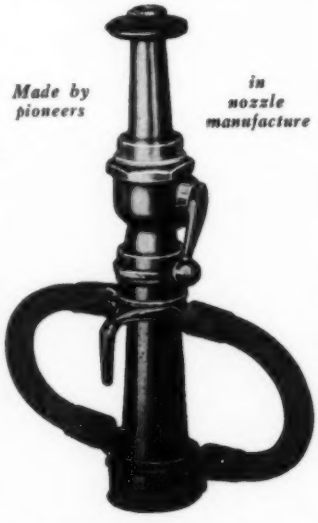
J. N. HEDBERG MFG. CO.
321-349 WEST REED STREET
SAN JOSE, CALIFORNIA

BODY-GUARD
BUNKER SUITS
FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR
SIREN BOOTS
We have been supplying FIREMEN'S CLOTHING for over 25 years.
Any fireman can have a catalog by writing—
BODY-GUARD MANUFACTURING CO.
ST. JOSEPH MISSOURI

BAR-WAY
HOSE COUPLINGS
U. S. PATENT 2387447
for
HIGH PRESSURE
FOG lines
Approved By
UNDERWRITERS LABORATORIES
Streamlined
Full Flow
High Pressure
Accurately Machined
Internal Expansion
Remountable
"ON THE ENDS—IN THE END"
IT'S BAR-WAYS
BAR-WAY MFG. CO.
STAMFORD • CONNECTICUT

"All American Choice"
Made by pioneers
in nozzle manufacture



INVINCIBLE
NOZZLES
F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
Boston, Mass.
1837 — 1947

maintain a modern library in each of our sixteen stations. This library contains up-to-date data concerning all subjects relative to good fire prevention, hydraulics, fire fighting methods and ethics, first aid practices and many others. Most men take an interest in this opportunity to study, as it is conducive to further advancement on the job. Of course, this library is available to all members.

In addition to the above mentioned library, each man has in his constant possession, the standard Long Beach Department Fire Fighter's Manual in three volumes, as well as the Long Beach Fire Department Rules and Regulations.

Arthur J. Howard, Chief, South Bend, Ind.: Officers' efficiency may be improved by periodical attendance at fire college schools held by the various states.

They should also be required to attend regularly conducted courses of highly technical subjects given under the supervision of competent specialists from diversified fields of production and education. The nature of these subjects shall be closely associated with the causes and defense of fire.

It is most imperative that classes be sufficiently interesting to attract and hold the attention of the men and that they be presented in a understandable manner.

C. C. Styron, Chief, Atlanta, Ga.: The Atlanta Department has in the past given all officers a special course in leadership training.

In addition to this course we have held monthly officers meetings for advanced training under the supervision of our chief of training.

The officers receive a certificate of proficiency upon completion of the leadership course.

The certificate was issued by the Atlanta Opportunity School over the signature of the Director of Vocational Education and our fire department instructor.

I believe there should be a continuation of supervised monthly round table discussions of the problems of officers and also advanced training. In addition to the lecture method, so commonly used, education by projection or other visual aide should be given.

Improved fire fighting methods should be taught by actual performance at the drill field.

* * *

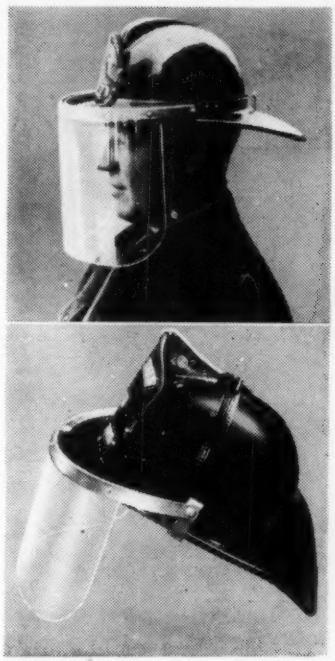
The following replies are in response to a previous round table discussion on the use of recording devices for telephoned fire alarms.

F. H. Lausch, Chief, Colorado Springs, Colo.: It is my opinion that such recording apparatus for telephoned fire alarms would be very valuable to our department as our alarm system is located in No. 1 Fire Station and there are no full time operators, the watch being maintained by the firemen on duty in the station. In the past we have had the following experiences with phone alarms: The watchman had received an alarm for a certain address. A check-up showed that the person turning in the alarm had moved to a new address and had given the old address on the alarm. A recording of this would have saved

Now In Use Coast to Coast!

FIREMEN'S SAFTI-SHIELD

(Pat. No. 2121427)



- **Designed and Adapted for Use on MSA, Cairns Flintflex or Any Style Fire Helmet**
- **You Can Attach Safti-Shields to Your Helmet Easily and Quickly by Our Simple Directions**

The SAFTI-SHIELD is a definite necessity in firefighting! It will reduce fire losses because it enables the fireman to get closer to the base of the fire SAFELY.

Made of Plexiglas, the tough heat resistant material that will not shatter and is clearer than glass. The SAFTI-SHIELD will not ice up when fighting against cold wind, sleet and snow. Protects face and eyes against heat, cold, sparks, flying debris, water, chemicals, etc. Write NOW for name of your nearest distributor!

DEALERS and DISTRIBUTORS—
Request Details—Few Territories Available

FIREMEN'S SAFTI-SHIELD CO., Inc.
310 Waynesville Avenue Asheville, N. C.

Shields are priced $10 (Single Units). Quantity discounts range from $7.50 to $9.00 each. Specify make, style and headsize of helmet when ordering.

New **HEAVY-DUTY ELECTRIC PLANT**

5000 WATTS

Only 272 lbs!

5CK-115M
$545.00
FOB MINNEAPOLIS

- Floodlight danger spots, operate tools, pumps and blowers with this new, large capacity, portable Onan Electric Plant. Mounted in a tubular-steel guard frame, this unit of lightweight, aluminum construction is easily carried by two men. Ruggedly built, powered by 10 H.P., horizontally opposed, two-cylinder, 4-cycle, air-cooled Onan engine. Equipped with four or six-receptacle outlet box.

NEW ONAN CK ELECTRIC PLANTS are available in 5,000 Watts D.C., 115 and 230 volts; 2000 and 3000 Watts A.C. in all standard voltages.

ONAN ELECTRIC PLANTS—*A.C.: 350 to 35,000 Watts in all standard voltages and frequencies. D.C.: 600 to 15,000 Watts, 115 and 230 Volts. Battery Chargers: 500 to 6,000 Watts, 6, 12, 32 and 115 Volts.*

ONAN AIR-COOLED ENGINES—*CK: 2-cylinder opposed, 10 HP. BH: 2-cylinder opposed, 5.5 HP. 1B: 1-cylinder, 3.25 HP.*

Onan PRODUCTS

Write for Catalog

D. W. ONAN & SONS INC.
4528 Royalston Ave., Minneapolis 5, Minn.

ONAN ELECTRIC PLANTS

VALVES
HYDRANTS
AND PIPE LINE ACCESSORIES

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 40.

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

FIREMEN'S BOOTS...

The Name of *Dependability*. Assuring the Firemen: *Safety, Comfort and Wear* in Boots *with 19 outstanding features.*

A PRODUCT OF
BEACON FALLS
RUBBER
FOOTWEAR
BEACON FALLS
CONN.

the fire department some embarrassment in proving that they had gone to the address given over the phone. In other instances a recording would prove whether the watchman was at fault or the party giving the alarm. Also we have had experiences when the party has called the fire department saying their house was on fire and then hung up without giving an address. It would also help straighten out any misunderstandings as to how an alarm had been turned in relative to location and type of fire.

W. H. Hazell, Chief, Hutchinson, Kan.: While this is a new subject to us, we believe it will no doubt have its merits in that it may some time prove beneficial in chasing down a false alarm, and may even prove valuable in convicting arsonists. It may also settle some dispute concerning an alarm received by telephone.

L. L. Petrey, Chief, Mobile, Ala.: I believe that a device for recording telephone conversations between the public and the fire alarm operators and from the fire alarm operators to the fire stations, would be of benefit to the fire service.

In case of a false alarm being turned in by telephone to the fire alarm operators, or a misunderstanding between the fire alarm operators and firemen receiving calls at the fire station, you would have a record of who said what.

John G. Carlisle, Chief, Corpus Christi, Tex.: With a recording device for telephoned fire calls, you would be sure of getting the correct address.

This would also discourage the turning in of false alarms by new members in the department and would also have a great psychological effect on the public if they were aware of the recording and that their voice might be recognized.

John E. Bull, Chief, Bellington, Wash.: Such a recording device would assist in clearing up misunderstood and misdirected alarms. It would also help in training operators.

J. C. Sievert, Chief, Tucson, Ariz.: I believe the recording of fire alarms would be helpful in the following ways:

1. Should there be any later dispute as to the address given.

2. In case of malicious false alarms, a record of the sender's voice might prove instrumental in bringing about conviction if the source of the alarm could be traced.

3. Following the above example, it would tend to discourage future transmission of malicious false alarms once it became known that conversations are recorded.

4. Recorded transmissions could be used to educate the public and show them how some people become excited and confused when reporting a fire.

M. K. Evans, Chief, Lynchburg, Va.: I cannot see where any such apparatus can be of material aid to a department such as we have in Lynchburg.

We have switchboard service at the headquarters station and with the fine cooperation received from the local telephone company, we have very few mix-ups.

L. B. Barnum, Chief, Phoenix, Ariz.: We believe that the recording of tele-

DAVY *automatic*
FIRE ESCAPE

The "DAVY" is an absolute necessity in every fire department! It saves firemen — saves time — saves lives! Just hook it to a ladder rung — put strap around the victim — that's all there is to it. It lowers the person at about two feet per second — safely — while another strap is waiting for the next person to be lowered. It will lower five persons in less time than it takes one fireman to climb a ladder and bring back one victim.

The "DAVY" is 100% automatic — requires no manual manipulation. There is no upkeep—it will not deteriorate — needs no mechanical adjustments — will not get out of order. The brake mechanism is sealed in a round container about 6" by 2", with steel-cored cord neatly coiled below the container. *Davy's have been in service for over 40 years.*

DAVY AUTOMATIC
FIRE ESCAPE CO.
Colvin Station, Box 5?, Syracuse 5, N. Y.

BISHINGER-KOEHLER
INHALATORS

have been in use 25 years.

Approved by the American Gas Association and accepted by the Council on Physical Therapy of the American Medical Association.

•

Send for literature.

•

BISHINGER-KOEHLER
MANUFACTURING CO.,
Inc.

7840 Kelly Street, Pittsburgh 21, Pa.

phoned fire alarms would be of benefit to the fire department. Often when a person sends in a telephone fire call he is excited and sometimes gives the wrong address and the equipment rolls to the wrong address. Then when the sender calls in to complain, with the aid of the recorded telephoned fire alarm, it would be easy to determine who was at fault, the sender or the fire alarm operator.

Olaf Sorenson, Chief, Superior, Wis.: Frankly, I do not see the necessity of accurately recording either an alarm or conversation. If it is to substantiate the time, I don't believe it necessary. If it is to check false calls on dial phones where there is now no chance of manual detection at the telephone office, it would do no more than to record a voice so as to be familiar with it on the next false call. If it is to check on wrong addresses given on telephone alarms, it will not serve the purpose of correcting the operator, because that can only be done by careful attention to our communications.

There are many new mechanisms coming out of the late war, and we should be most careful that we are practical in our use of them for our service, and not load up our departments with apparatus that looks very complicated and intricate to the public but in reality serves no better or more useful purpose than some of the standard equipment that has served well and proved reliable through the years. There may be use for such recording apparatus in our work, but very sound reasons must be the basis for installing it.

Walter L. Hydaker, Chief, Lima, Ohio: There is no question but that the recording of telephoned fire alarms would prove of great value on many occasions. Here is one in particular. If the operator or fireman who was receiving the alarm knew that a record was being made, it would be a great incentive for him to get the correct location, if at all possible, as it would be impossible for him to blame the person sending in the alarm.

With Our Readers

Suggested Use for Wet Water

To the Editor:

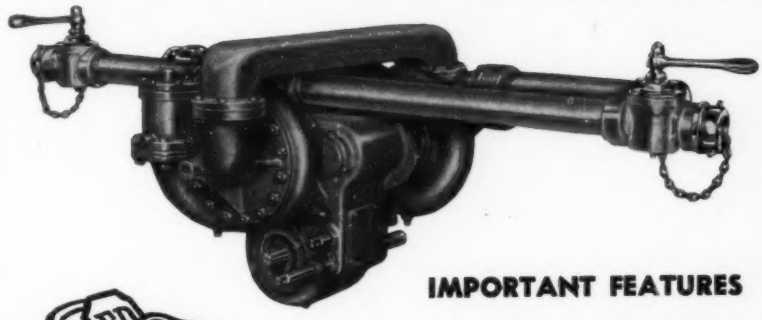
Last evening after a most enjoyable day at the Maine State Safety Conference, my Fire Inspector and I stepped off in Gardiner, Me., for a bite to eat. As we sat in the hotel dining room discussing the highlights of the day and looking over the literature we had accumulated, we came upon a pamphlet entitled "Wetter Water" and under the caption "Can a Duck Swim," explaining how wet water penetrates the oily feathers of a duck, causing it to lose its buoyancy and sink.

At this point of the discussion, my Inspector's wife, grinning and looking very happy, said, "Now that gives me an idea how to solve a problem that has annoyed me all my married life." The Inspector and I, sensing a woman's intuition, thought we might get a constructive idea for use in our department and naturally were most anxious to know just what this idea was.

You can imagine our surprise when the little lady came up with this one.

ANOTHER BARTON-AMERICAN EXCLUSIVE

—Duplex-Multistage, Centrifugal, Midship Mounted—



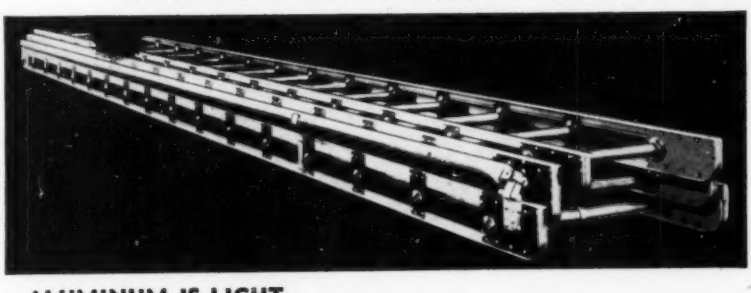
A Bear for Work

IMPORTANT FEATURES

1. First Duplex-Multistage Pump developed for fire-fighting purposes. 2. The only fire pump with THREE distinct operating characteristics — other two stage pumps have only two operating characteristics. 3. Two independent pumps — breakdown of one pump still leaves one in service. 4. Heavy construction for high pressure "fog" service.

AMERICAN-MARSH
PUMPS, INCORPORATED
BATTLE CREEK, MICHIGAN

FIREMEN PREFER...
Aluminum FIRE LADDERS



ALUMINUM IS LIGHT

When time is precious and manpower is at a premium, light-weight Aluminum Ladders are your most efficient life-saving and fire-fighting tools for they require fewer firemen to raise and operate them successfully.

ALUMINUM IS STRONG

Available in 1, 2, 3 and 4-section models, every Aluminum Ladder is heavily riveted and constructed of high-tensile-strength Aluminum Alloy. The corrugated rungs are securely fastened with aluminum expansion bushings, with the result that the rungs never become loose or break off.

ALUMINUM IS DURABLE

Practically all of the ALUMINUM FIRE LADDERS purchased since 1936 are still in use today. Being fireproof and rust proof they last longer than other types. Write for Complete Information.

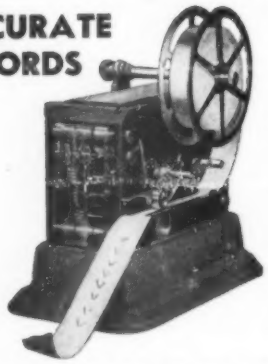
"Original Manufacturers of Aluminum Ladders"

Aluminum Ladder Company

200 Carbis Street
Worthington, Pa.

It will help if you will mention FIRE ENGINEERING *when writing advertisers*

FOR ACCURATE RECORDS

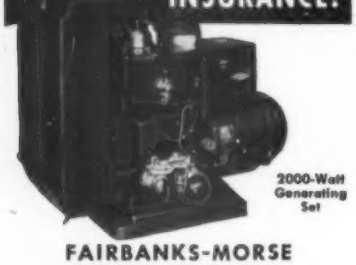


HARRINGTON PR-10
FIRE ALARM

THIS punched tape register automatically makes records of the fire alarms or other emergency signals as transmitted over such circuits, in central fire alarm stations, outlying fire stations, police department offices, water works, etc.

HARRINGTON SIGNAL COMPANY
MOLINE . . . ILLINOIS

EMERGENCY POWER INSURANCE!



2000-Watt Generating Set

FAIRBANKS-MORSE GENERATING SETS

INSURE yourself NOW against electric power failure. These performance-proved generating sets, installed as stand-by units, will give dependable service even under continuous, heavy-duty operation. A.C. and D.C. types, remote and automatic start, 350- to 35,000-watt capacities. Send today for FREE literature!

Fairbanks-Morse
A name worth remembering

FAIRBANKS, MORSE & CO., Dept. M-12
Chicago 5, Illinois
Please send free literature on Fairbanks-Morse Generating Sets.
Name.....
Address.....
City..... State.....

The killing of the duck has been taken care of by the wet water penetrating the oily feathers of the duck causing it to lose its buoyancy and sinking. Now the only thing lacking in the solution of her problem is whether the wet water will penetrate the skin of the duck so that the down and feathers can be easily removed. If you don't know it, it is quite a job to defeather a duck.

If the makers of wet water will guarantee to the housewives of this country that their product will not only kill the duck, but will also make defeathering a pleasure instead of a task, they will have created a market that will surpass all expectations. Their product really would have a future not only in the fire extinguishing field but also in the poultry industry as well.

Very truly yours,
VAN E. RUSSELL, Chief
Rockland, Me.

Editor's Note: Yes, wet water would probably penetrate to the roots of duck feathers, but it would have to be hot to loosen their hold. It would likely do as good a job of penetrating as it does in closely packed, smouldering combustibles, where its effectiveness has been proven beyond all doubt.

The Watch Desk

(*Continued from page 879*)

When a skunk showed up in the Tallahassee, Fla., U. S. Post Office, city firemen were "special called" on the jump. They attacked with what the wayward press called "ether gas." But the skunk counter-attacked—and the blaze-beaters beat a hasty retreat, to return later with what the same paper said was "a carbon dioxide solution which froze the invader stiff in a ventilator shaft. He was then safely removed." . . . In Nashua, N. H., the 100-year-old Park Theatre burned with loss of between $300,000 and $400,000. Eight firemen were hospitalized for injuries as the blaze threatened the downtown area. . . . In Chicago, Ill., fire swept through Charlie Yong's Chinese Laundry. One of the saddest sufferers was Evanston, Ill., Policeman Charles Bartlett. Twelve of his shirts were destroyed, leaving him only the one he was wearing. . . . In Portland, Ore., the City Council commended Norman Howard, fire investigator for the City Fire Bureau, for saving the life of John R. Weidenkeller, last August, when the latter's clothing caught fire.

New Station for Charlotte

City Manager Henry A. Yancey of Charlotte, N. C., says that contracts for construction of a new fire station in the Charlotte suburb of Chantilly, and for the rebuilding of the Dilworth station, will be let shortly.

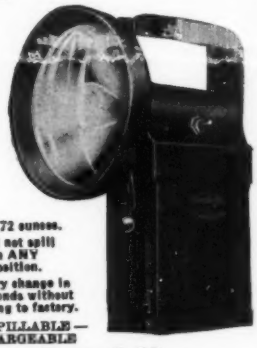
M. R. Marsh, Charlotte architect, is drawing plans for the two units. In accordance with the expressed wish of Fire Chief Hendrix Palmer, the two stations will be ultra modern. The construction will be financed with the sale of $112,000 in bonds voted along with $4,000,000 in bonds for water expansion, a good slice of which will be used to pay for the proposed construction.

Plus the money for the new stations, there is the sum of $37,500 available for purchase of new equipment for fire fighting.

D. G. SPENCER

CAN PAY for ITSELF IN 6 MONTHS
by Eliminating Dry Batteries

8" TRUE parabolic, silver plated reflector; 25,000 c.p. beam; ½ mile range; sturdy metal case; corrosion proof terminals.



Only 72 ounces. Will not spill in ANY position.
Battery change in 10 seconds without returning to factory.
NON-SPILLABLE—RECHARGEABLE

Type G-23
MASTER-LIGHT for FIREMEN
Police and Watchmen
Write for new Emergency Lighting Bulletin
CARPENTER LIGHTS
290 Master-Light Bldg.
Boston 45,
SOMERVILLE, Mass.

THIS Fire OUT IN 11 SECONDS

REVOLUTIONARY Instant "LOADED STREAM" EXTINGUISHER OFFERS 6 Big Advantages

When 2½ gal. types are needed, specify the Fyr-Fyter INSTANT. Exclusive "loaded stream" charge 1) puts out fire faster with ⅓ the fluid, 2) quenches and fireproofs, 3) kills class A and B fires. The INSTANT is 4) anti-freeze, 5) needs no recharge except after use, 6) throws a strong stream.

Underwriters' Approved! Write for literature and details of Underwriters' amazing 11 second test. 1¼, 2½, 20, and 40 gals. Also special fire department models.

THE FYR-FYTER CO.
Dept. 101-36, Dayton 1, Ohio
Fyr-Fyter Extinguishers

Manufacturers' Announcements

(*Continued from page 878*)

pointment of C. E. Hickey & Sons, Ltd., 589 Cannon Street, East Hamilton, Ont., as exclusive representatives in Canada on the Barton-American fire pump line. It is understood that the Hickey organization will ultimately establish a manufacturing setup in Canada to build complete fire apparatus.

E. F. Gaston A.D.T. Vice-President

Edward F. Gaston has been elected a vice-president of American District Telegraph Company and its controlled companies. Mr. Gaston began with

Edward F. Gaston

A.D.T. in New York in 1907 as a signal marker; member of the Executive Office Staff in 1928; elected Assistant Secretary of the Companies in 1935 and General Superintendent of Plant since 1941.

New Fire Picture in Color

A new technicolor motion picture "Fire and How To Fight It" has been produced by Walter Kidde & Company, Inc., of Belleville, New Jersey.

The picture, which shows how various types of portable extinguishers can be used effectively against incipient fires, is especially recommended for any fire brigade training program.

The film is 16 mm. with sound track, has a running time of 23 minutes and can be obtained free on request to the Kidde Company.

Methyl Bromide

(*Continued from page 876*)

The effective quality of this material as an extinguishing agent was recognized during the war; systems were installed in aircraft which would spray the liquid as a mist or vapor in the engine space to put out fires. It is the general opinion of those best informed that due to its high toxicity it should not be used in fire extinguishers available to the general public. Food brought in contact with Methyl Bromide should be discarded.

Below is given the principal information on Methyl Bromide as taken from data issued by Underwriters Laboratories:

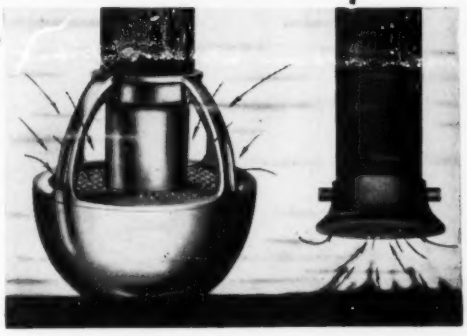
"Methyl bromide (CH_3BR) (when pure) is a colorless, transparent volatile liquid, SP. GR. 1.73, boiling point 4.6 C. (40.3 F.), vapor density 3.29 (air = 1).

Don't Gamble With Your Fire Pump
If You Draft Water You Need

FILTER-FLO

It's new!

It's different!



the new **FILTER-FLO** *the old way*

Adds years to fire pump life—Eliminates Clogged Hose Nozzles—Keeps Sand and Gravel out of your pump—Keeps Weeds and Marine Life out of hose lines—Sturdy—Dependable—Attractive—Made of Polished Aluminum. Filters the water twice before it can enter the hose—When in a vertical position it takes water only from the cleanest part of the stream.

SHEREN FIRE EQUIPMENT CO. Mason, Mich.

If your fire equipment dealer cannot supply you order direct. Specify size of suction hose and threads per inch.

FILTER-FLO is the new streamlined liteweight Suction Strainer Filter

STERLING MODEL "M" GENERAL ALARM SIREN

STERLING

A NAME YOU CAN DEPEND ON

An absolutely dependable, tried and proven siren for communities of all sizes. Loud, clear, simple to install and no maintenance to bother with. Embodying the "know how" of the oldest and largest makers of siren signals in the fire field. Write for descriptive literature and list of towns using the model "M." Also . . . Manufacturers of a Complete Line of Apparatus Sirens.

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street, Rochester, New York

DEPENDABLE - SIRENS

JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE

We can now supply old type ¾ Length and Knee Length Felt-lined Firemen's Boots.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

Chief---

COULD YOU PUT OUT A CHIMNEY FIRE FOR 55¢?

YOU CAN WITH IMP

CHIMNEY FIRE EXTINGUISHER

Save rushing to chimney fires over icy pavements . . . avoid slippery ladders and roofs by using IMP Chimney Fire Extinguisher. Just throw a 55c package "as is" on the hottest part of the fire in the stove, furnace or fireplace. The chimney fire will be out in jig-time without water or chemical damage. Recommended by fire chiefs, who always carry IMP in their cars for emergencies. Many volunteers carry it in their personal cars.

USE THIS COUPON FOR YOUR ORDER

F. C. FOARD & CO., Bridgeport, Conn.

Please send me ..... dozen packages of IMP. I will honor your bill f.o.b. Bridgeport.

NAME .....

ADDRESS .....

CITY .....

STATE .....

FIRE EQUIPMENT DISTRIBUTORS ATTENTION
Add "IMP" Chimney Fire Extinguishor to your line. Write today for special distributor plan.

Toxic Hazard. Methyl bromide in concentrations of the order of 0.7 to 1.0 per cent by volume in air for durations of exposure of the order of ½ hr. has been shown to be lethal to guinea pigs. Its odor is not distinctly unpleasant and it cannot be said to give definite warning of its presence in dangerous concentrations. Underwriters' Laboratories' test data confirm opinion that methyl bromide, like many other toxic products, may not manifest its poisonous effects immediately.

Methyl bromide readily decomposes into toxic products in the presence of flame or heated surfaces at high temperatures. These products include hydrobromic acid (HBr) and small amounts of bromine (BR_2).

Fire Hazard is very small and the material is classified as "weakly flammable." Weak flame propagation within the narrow range of 1 per cent (13.5 to 14.5 per cent by volume) in the presence of an intense source of ignition is recorded in technical literature.

Uses. Methyl bromide is effective as a fire extinguishing agent in certain concentrations and has also been used as a refrigerant. In both instances, however, its use has been limited on account of the high toxic hazard. Methyl bromide finds its principal use as a fumigant and is listed by the Laboratories for this purpose, both alone and mixed with CO_2, in Section II of the List of Gas, Oil and Miscellaneous Appliances. For use alone it is supplied in steel cylinders under pressure of 11 lb. per sq. in. at 70 F.

Listed mixtures of methyl bromide and carbon dioxide for use as fumigants are supplied in steel cylinders under a pressure of 820 lb. per sq. in. at 70 F. These mixtures are classed as nonflammable and are characterized by toxicity of a comparatively low order when used in proportions of 15 to 28 lb. per 1,000 cu. ft. and in accordance with the procedure recommended by manufacturers.—N.B.F.U. BULLETIN No. 251.

Buffs Buy Ambulance

Some thirty-five Milwaukee, Wisconsin, men, from all walks of life, who are intensely interested in the different phases of fire fighting, organized the Fire Bell Club about a year ago. The purpose of the organization, according to its president, is "to render any assistance possible to our very capable Chief so that the City of Milwaukee will continue to have the finest Fire Department in the country in personnel and equipment."

The club members, most of whom are middle-aged, admit that they have never lost their enthusiasm for chasing a fire engine, but assert that attending all greater alarm fires is only one phase of the work their organization undertakes.

One notable example of the valuable support given the Fire Department by these men was evidenced during recent months when they decided to raise money to provide it with an ambulance service of its own. Prior to that time, Milwaukee's police department had endeavored to render this type of aid at fires, but there were times when its members were busy elsewhere and could not respond to calls for such assistance. So the men of the Fire Bell Club figured that if the Fire Department had its own emergency equipment,

CIRCUL-AIR

FIRE HOSE DRYER

WRITE FOR BOOKLET

Illustrates how Circul-Air saves hose, shortens drying time, prevents mildew and rot, air conditions as it dries, improves station design.

THE CIRCUL-AIR CORPORATION
575 East Milwaukee St.
DETROIT 2 MICHIGAN

AT EXTREMELY LOW PRICE

WELL KNOWN MAKE
— PORTABLE —
ELECTRIC GENERATOR
SKID MOUNTED

2500 WATTS A.C.
May Be Used for Lights, Tools, Etc.

NEW IN ORIGINAL CASE
REGULAR PRICE $495.00
WHILE THEY LAST $295.00
Complete with Replacement Parts

•

GORHAM
FIRE EQUIPMENT CO.
30 INDIA WHARF
BOSTON 10, MASS.

both it and the police department would benefit thereby. Contributions were solicited by the club members from civic-minded people and $7,000 was collected. With this money a very modern, fully equipped, Cadillac ambulance was purchased and presented to Fire Chief Edwadr Wischer as a birthday gift.

While said ambulance is primarily for fire department personnel who are injured at their work, it will be available for other uses in the event of great need.—JESSIE L. COOK.

Montrose Has Celebration

The 17th Annual Convention of the Northeastern Volunteer Firemen's Federation was held on Labor Day in Montrose, Penn. The event also commemorated the 100th Anniversary of the Montrose Fire Department.

Spotlighting the celebration was a

Old Apparatus Displayed at Northeastern Volunteer Firemen's Meeting

Shown left to right in front of the Montrose, Pa., Courthouse are an 1862 parade cart, an 1847 piano type pumper, a "modern" two-wheel chemical car and an 1855 four-wheel hose wagon.

parade participated in by fire units from eight counties, with forty-six pieces of apparatus, over 2,000 persons, and four bands and one drum corps, which was witnessed by 12,000 admiring persons.

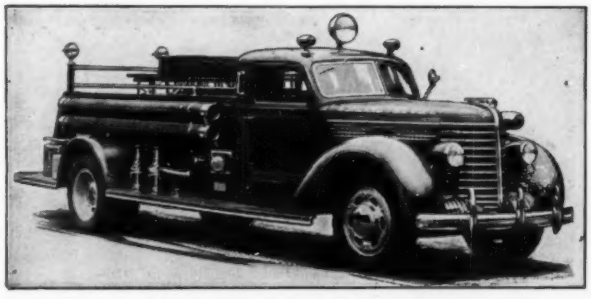
Fire companies in the line were from Taylor, Jessup, Olyphant, Throop, Dickson City, Peckville, Exeter, Nicholson, Archbald, Mayfield, Clarks Summit, Swoyerville, Old Forge, Springville, Forest City, Duryea, Susquehanna Hinmans Corners, Blakeley, Lake Ariel, Dalton, Nimmonsburg, Hop Bottom, New Milford, Simpson Hallstead, Great Bend, Seelyville Moosic, Pringle and Montrose.

Frank Zella of Forest City served as Fire Marshal and Robert McLaughlin as secretary of the committee on arrangements. F. Eugene Sykes was promotion manager of the celebration. Chief Duna A. Watrous was an active worker in the affair.

Officers elected for the coming year are: Schuyler Base, Blakeley, president; Bart Ford, Archbald, first vice-president; Harry Armstrong Taylor, second vice-president; Patrick McNulty, Duryea, third vice-president; M. Mockzycki, Pringle, fourth vice-president; Frank Kelly, Jessup, secretary; Franklin Clover, Lake Winola, treasurer and the Rev. Edmund L. John, First Christian Church, Scranton, Chaplain. (Thanks R. W. McLaughlin).

US UNITED STATES MOTORS CORP. 430 Nebraska St OSHKOSH, WIS.

Champion Fire Apparatus



Champion Fire Pumps

NEW 24-PAGE BOOKLET IN COLORS

Write Today For Your Copy

W. S. DARLEY & CO., CHICAGO 12

Minneapolis Fireman Killed

Trapped when a false ceiling of the Happy Hour bar and night club fell during a three-alarm fire, which badly wrecked the occupancy on the night of November 5th, 1947, Fireman Henry A. Obinger of Station 10, Minneapolis Fire Department, was killed and six other firemen were injured. The victim was the sixth member of the department to lose his life while on duty during the past year.

According to Fire Chief George S. Lockhart, Obinger was pinned and smothered by a flimsy false work when its wooden bracing burned away and dropped the ceiling of wood, plaster and glass.

The Happy Hour fire began shortly after 7:00 P.M. in a small, glass-enclosed kitchen where a chef was cooking. Flames broke out in the grease chute over the broiler and employees called firemen and fought the fire with hand extinguishers. Believing the blaze extinguished, it is said, a suction fan was turned on to draw out the smoke but according to Chief Lockhart, the flames had been swept by the fan through the narrow area between the ceiling proper and the false, decorative ceiling.

A dozen firemen were fighting the fire on the floor of the dining room when the falsework fell on Obinger. While fellow firemen covered rescuers with protecting streams, the victim was pulled out but was past aid. Other firemen injured included District Chief William Huttner, Capt. Richard Craddick, Firemen Eklund, Berryman and Petroske, all of Ladder 1; Capt. Henry Story and Fireman Horton of Engine 6, and Fireman Tilbury of Engine 4.

The Minneapolis Fire Department's smoke extractor was operated at the front entrance of the Happy Hour to remove the smoke and gases, following the fatal fire.

West Branch Firemen Banquet

More than 300 men from sixteen member fire companies in Lycoming County, Pennsylvania, comprising the West Branch Firemen's Association, attended the organization's annual banquet Thursday evening, November 20, 1947 at Knights of Columbus ballroom, Williamsport, Penn.

A. Edgar Eschenbach, Loyalsock Township Fire Chief, Chairman of the banquet committee, also acted as toastmaster. The guest speaker was Chief Roi Woolley, assistant editor, FIRE ENGINEERING. He was introduced by Edgar A. Spotz, advisor to the Pennsylvania Fire Training program. Among the other guests present were State Police Sergeant Edward F. Bouse and Private J. E. Sacriste of the State Fire Marshal's office. Fire Chief M. E. Clark, whose Williamsport Fire Department was host to the visitors, also spoke.

Dinner music was provided by a mixed quartette and following the address of the evening a talent show was presented.

Officers of the Association are: President, Chief Paul Myers, Hughesville, Pa.; Vice-President, Elmer Grunt; Secretary, John Michaels, Picture Rocks; Treasurer, Jewett Shirm.

Boston Places Big Order for Apparatus

In awarding contracts for 39 new pieces of apparatus, costing a total of

Classified Advertisements

"For Sale," "Proposal" and "Wanted" advertising $6 per inch insertion less 10% for three or more consecutive insertions.

FOR SALE

15 lb. CO-2 extinguishers. Unused Surplus. Red color. Leading manufacturer's brands. Fully charged, brass squeeze grip, $25.00 ea. Maryland Mfg. & Eqpt. Co., 1 W. Alleghany Ave., Towson, Balto. 4, Md. Phone Towson 1991.

FOR SALE—FIRE HOSE

DOUBLE JACKET, 1½", 50 ft. lengths. Top brand. Absolutely fresh, clean and Sept. 1945 dating. Unused Surplus in perfect condition. Price with solid brass I.P.T. couplings, $16.50 per length. Can also furnish N.S.T. or P.C.T. couplings.

Full Coverage Asbestos Fire Suits @ $5.00
2½ Gal. Foam Extinguishers, Copper @ $6.00
Wire Clippers, 18", Rubber Handle @ $3.00
Nozzles, 2½ N.S.T., Brass, Heavy @ $2.25
Electric Alarm Bell, 8", 110 A.C. @ $6.00

HALPRIN SUPPLY
140 E. 2nd St., Los Angeles 12, Calif.

FOR SALE
FIRE HOSE—50-FOOT LENGTHS

1½" Double Jacket CRL with Brass Cplgs. Std. Pipe Thread 400# Tested..... $16.00 Lgth.
1½" Single Jacket Brass N.S.T. Cplgs. $11.00 Lgth.
2½" Single Jacket Brass N.S.T. Cplgs. $21.00 Lgth.
3½" x 50' Lgths. Double Jacket CRL Brass N.S.T. Cplgs. 400# Tested..... $35.00 Lgth.
2½" Unlined Linen Brass N.S.T. Cplgs. $9.75 Lgth.
4" x 12' Double Jacket CRL Soft Suction Uncpld. ..... $9.00 Lgth.
4" x 16' Double Jacket CRL Soft Suction Cpld. ..... $15.00 Lgth.
4" x 10' Suction Hose, Rubber Wire Inserted Cpld. ..... $9.50 Lgth.
1½" x 50' Chemical Engine Hose Wrapped Type Cpld. ..... $24.50 Lgth.
2½" Brass Hose Nozzles N.S.T..... $3.15 Ea.

Navy Surplus Stock, Unused in Original Factory Cartons, Top Quality Brands.
Maryland Mfg. & Eqpt. Co., 1 W. Alleghany Ave., Towson, Balto. 4, Md. Phone Towson 1991.

DEALERS WANTED
AUTOMATIC FIRE PROTECTION

Wall or ceiling type. Operation positive at 165° —can also be used manually. Pint & Quart Glass Grenades. Free renewals in case of fire. Component parts U.L. approved.

GENERAL MACHINE CO., CAMDEN, N. J.

FOR SALE

500 Gal. Front Mount Fire pumps made by well known manufacturer. Clean unused surplus. Price including 2-10 foot 4 in. suction hose. $250. Frank Shortner, Edgar, Wis.

SPECIAL BARGAINS

3½ gal. CT Wheeled Extinguishers.... $29.50
2½ gal. Foam—Red Finish—Ext..... $7.50
15 lb. CO^2 Extinguisher..... $18.50
Less Charges—FOB—Govt. Surplus—New Red Finish—A1 cond.—Limited Supply.

FIRE EXTINGUISHER SERVICE
Box 257, Warrenton, Virginia

FOR SALE

A Seagrave 750 Gallon Pumper in first class condition. Price $3,000.00. Monongahela Volunteer Fire Department, Monongahela, Penna.

FOR SALE

1—1942 Pontiac Ambulance in A-1 Condition. Apply at The Goodwill Fire Co., Pottstown, Pa.

FOR SALE

Invincible Nozzle for mounting on the side of a Fire Truck. 3 way siamese. Lever handle and lock arrangement. Write Flower Hill Hose Co., Port Washington, New York.

FOR SALE

Fire Hose, unused, 50 ft. lengths, 400 lb. test, double jacket cotton, rubber lined, brass coupling, 2½" at 80¢ a foot; 1¼" 50¢ a foot; 15 lb. fully charged CO^2 Extinguishers, $30.

Following will sell for ⅓ list price and less; assortment of Play Pipe Nozzles, Fog Nozzles, Mystery Nozzles, Applicators, Foam Play Pipes, Baker Cellar Pipes, Portable Revolving Monitor with Triple Siamese, Siamese plain, Double Hydrant Gate, Life Belt, Bresnan Hose Hoist, Safety Belt, Fire Axes, Hose & Ladder Straps, Spanners & Wrenches, Peerless Hose Clamp, Full Asbestos Suit, Copper Hose Jacket, Automatic Coupling Ring Expander, Expansion Rings, Rubber Washers, Foam Generating Tank & Foam Liquid, 4 Six Cyl. Chrysler Marine Engines 90 H.P. with Centrifugal pumps, perfect for fireboat, water front use or jet pile driving only 160 hours in use.

GEORGE ROGERS
1837 - 59th St., Brooklyn 4, N. Y.

WANTED

Fire Equipment Dealers to sell Morning Pride protected rubber firecoats, fire pants, fire mitts and fire suspenders.

Write today Morning Pride Mfg. Co., 1984 Home Ave., Dayton 7, Ohio.

ENGINEER WANTED

Nation-wide mutual insurance company wants man for training and supervising field engineers in fire prevention work. Must have rating bureau experience using Dean schedule. Permanent position, requires traveling. Our men know of this ad. Write Box 25, c/o FIRE ENGINEERING, 24 West 40th St., New York 17, New York.

WANTED

Distributors wanted for a new proven and guaranteed product used in maintenance of fire protective equipment. Exclusive protected territories available. Write to Box 50, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

WANTED

Dealer—Distributors to sell fire apparatus manufactured by well-known Mid-West Factory. Prompt delivery. Attractive proposition. Address Box 30, FIRE ENGINEERING, 24 West 40th St., New York, 18, N. Y.

INDEX FOR 1947

The index, covering the twelve issues of Fire Engineering for 1947 will soon be ready for distribution.

Your copy will be mailed free upon request.

$595,693, Boston, Mass., has placed the largest single order in the history of the city. Officials awarded contracts for 23 of the pieces to five companies other than the lowest bidder in order to obtain early delivery. The total cost will exceed the lower bidders price by $41,-701.

Most of the citizens of the city are satisfied that Acting Mayor Hynes was justified in approving the extra expenditure to obtain the earliest possible delivery, in view of the critical condition of much of Boston's apparatus.

During the war, and during the years of financial stress, little of Boston's obsolete apparatus was replaced, so that today many of the pieces look like fugitives from a museum.

That there have been few failures of equipment is a credit to the Fire Department Maintenance Division.

Equipment ordered include six 65-foot aerial trucks, eighteen 750 G.P.M. pumpers, twelve hose tenders and a tractor for one of the water towers.

I. A. F. C. Directors to Meet Jan. 27-30

The annual meeting of the Board of Directors of the International Association of Fire Chiefs will be held at the Hotel Pennsylvania, New York City, on January 27th to the 30th inclusive.

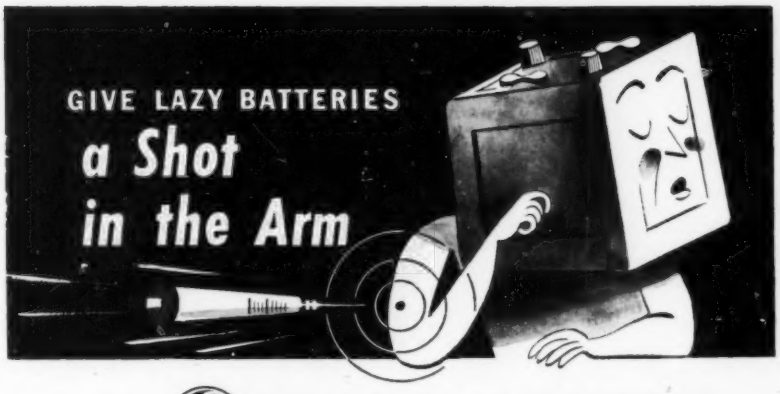
New Radio Station for Bridgeport F. D.

Construction of Radio Station WMQR, to be used by the Bridgeport, Conn., Fire Department as a nerve center for a new three-way radio communication system was completed on Nov. 24. The radio room and transmitter for the station is located in the alarm room in Fire Headquarters, Middle Street, and is manned by alarm room operators, who have been granted special restricted radio operator's licenses by the FCC.

The Federal Communications Commission authorized the 75-watt station in September and gave it an assigned frequency of 154.19 megacycles in the frequency modulation band. Installation of 15-watt mobile transmitters and receivers in five "key" vehicles of the Department has been made. The radios are in Chief Martin J. Hayden's car, two assistant chief's cars, the superintendent of fire alarms car, and Squad 5.

The new station enables fire commands to be relayed to apparatus stationed at strategic points about the fire grounds and will eliminate the former system by which the Fire Department's communication was through Police headquarters the Bridgeport Police Department's radio system.

TOM MAGNER.



with a GE TUNGAR* CHARGER

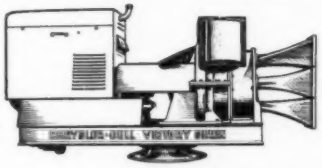
Are *slow starts* spoiling your record for getting to fires fast? Maybe your fire truck batteries need extra pep—the kind they'll get from a Tungar charger. It's a heavy-duty rectifier that can charge one 6-volt battery at 6 amperes, two 6-volt batteries at 3-amperes, or a 12-volt battery at 3 amperes.

All you have to do is attach clips to the batteries, and give them a charge *right in the truck.* Make the charge while the truck is off duty, and watch it take off when you need it!

Ask us for further details. Write to Section A97-1235, General Electric Co., Bridgeport 2, Conn.

**Trade-mark Reg. U.S. Pat. Off.*

GENERAL ELECTRIC



SIREN SALE

UNUSED CHRYSLER-BELL SIRENS

(Alarm Signals—mfgd during the war as air raid warning signals. Government Surplus.)

COMPLETE AS FOLLOWS:

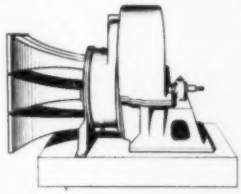
● 100 h.p. New Chrysler power unit complete with fluid-drive clutch. ● Unused powerful siren with tone of great intensity and carrying strength. ● Step-up Transmission. ● Ball-Bearing Turntable.

SALE PRICE COMPLETE (Unused)..... $1250

SIREN UNITS

The Siren unit alone may be purchased separately. In this manner it can be operated by electric motor or other power.

SALE PRICE (Unused)..... $250



HOSE SPECIALS

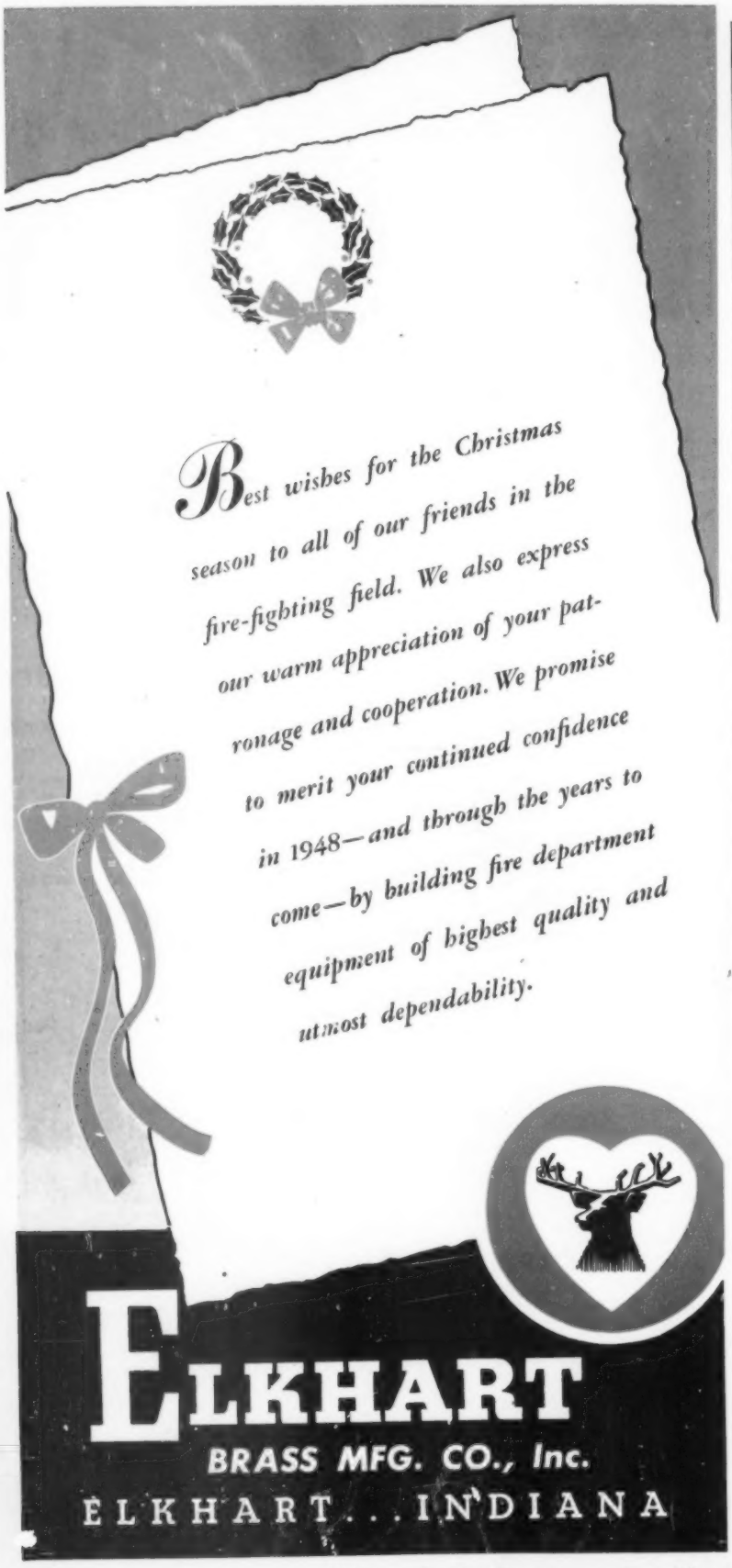
Unused (Government Surplus) 4-inch heavy duty suction hose with steel wire reinforcing inside—and complete with male and female fittings (original price almost $50 per length)...Sale Price, $12 per 10 ft. length, complete with fittings.

30-ft. lengths 1½-inch suction hose complete with bronze male and female fittings, only $16 unused. 8½-ft. lengths unused 2-inch suction hose, complete with bronze male nipples (can be coupled together to make longer lengths), only $9.50.

2½-inch fire hose in 50-ft. lengths, complete with bronze fittings. (Unused), $22.50.

SEND FOR DETAILS

BERNSTEIN BROTHERS MACHINERY CO.
Since 1890
PUEBLO COLORADO


Best wishes for the Christmas season to all of our friends in the fire-fighting field. We also express our warm appreciation of your patronage and cooperation. We promise to merit your continued confidence in 1948—and through the years to come—by building fire department equipment of highest quality and utmost dependability.
ELKHART
BRASS MFG. CO., Inc.
ELKHART . . . INDIANA

ADVERTISING INDEX

FIRE ENGINEERING
DECEMBER, 1947

	Page
Ahrens-Fox Fire Engine Corp.	881
Akron Brass Mfg. Co., Inc.	885
Aluminum Ladder Co.	903
American District Telegraph Co.	854
American-LaFrance-Foamite Corp.	841; 851
American-Marsh Pumps, Inc.	903
Ansul Chemical Co., Fire Ext. Div.	883
Arnold, Hoffman & Co., Inc.	849
Atlas Safety Equipment Co., Inc.	898
Bar-Way Mfg. Co.	900
Beacon Falls Div., U. S. Rubber Co.	902
Bean Mfg. Co., John	842
Bernstein Brothers	909
Bishinger-Koehler Mfg. Co.	902
Body Guard Mfg. Co.	900
Boston Woven Hose & Rubber Co.	846
Braxmar Co., C. G.	896
Buckeye Iron & Brass Works	884
Carpenter Manufacturing Co.	904
Central Fire Truck Corp.	899
Circul-Air Corp.	906
Darley & Co., W. S.	907
Davy Automatic Fire Escape Co.	902
Dayton Fire Equipment Co.	898
Duo Safety Ladder Corp.	850
E and J Manufacturing Co.	855
Elkhart Brass Mfg. Co., Inc.	910
Emerson Co., J. H.	Inside Front Cover
Eureka Fire Hose Div., U. S. Rubber Co.	887
Fairbanks, Morse & Co.	904
Federal Electric Co., Inc.	839
Firemen's Safti-Shield Co., Inc.	901
Foard & Co., F. C.	906
Fog Nozzle International, Inc.	885
Ford Motor Co.	856
Four Wheel Drive Auto Co.	Back Cover
Fyr-Fyter Co.	904
Fyr-Fyter Products	898
Gamewell Co.	860
General Electric Co.	909
Goodrich Co., B. F.	843
Gorham Fire Equipment Co.	906
Gorman-Rupp Co.	890
Hale Fire Pump Co.	894
Hardie Mfg. Co.	882
Harrington Signal Co.	904
Hazelite, Inc.	889
Hedberg, J. N.	900
Hewitt-Robins, Inc.	852
Howe Fire Apparatus Co.	884
Janesville Apparel Co.	906
Leece-Neville Co.	859
McIntire Brass Works, F. N.	900
M & H Valve & Fittings Co.	902
Mack Mfg. Corp.	845
Manhattan Rubber Mfg., Division of Raybestos-Manhattan, Inc.	897
Mars Signal Light Co.	858
Mearl Corp.	899
Midwestern Mfg. Co.	844
Mine Safety Appliances Co.	Inside Back Cover
National Foam System, Inc.	853
O'Leary's Fire Prevention Co., Inc.	888
Onan & Sons, D. W.	901
Powhatan Brass & Iron Works	895
Quaker Rubber Corp.	892
Rockwood Sprinkler Co.	847
Russell Uniform Co.	896
Scott Aviation Corp.	891
Sheren Fire Equipment Co.	905
Smith & Co., D. B.	857
Stephenson Corp.	886
Sterling Siren Fire Alarm Co., Inc.	905
Textileather Corp.	848
United States Motor Corp.	907
Ward LaFrance Truck Div., Great American Ind, Inc.	886
Waterous Company	893
Wooster Brass Co.	898

Why does CHEMOX lead the field

IN FIRE DEPARTMENTS THROUGHOUT AMERICA?

Because ONLY CHEMOX gives you:

- Complete respiratory protection with a Replaceable Canister that MAKES OXYGEN AS YOU BREATHE!
- U. S. Bureau of Mines-approved protection for a minimum of 45 minutes under hard work.
- Light weight of only 13½ lbs. —complete with Chemox Canister.
- Freedom from High Pressure Valves, Lines and Fittings.

Plus MANY OTHER DISTINCTIVE FEATURES FOR GREATER COMFORT AND SAFETY.

Write for BULLETIN B-14!

M·S·A

Chemox

SELF-GENERATING

Trademark Registered

OXYGEN BREATHING APPARATUS

MINE SAFETY APPLIANCES CO.

BRADDOCK, THOMAS AND MEADE STS. · PITTSBURGH 8, PA.

District Representatives in Principal Cities

In Canada: MINE SAFETY APPLIANCES COMPANY OF CANADA LIMITED, TORONTO

Montreal . . . Vancouver . . . Calgary . . . Winnipeg . . . New Glasgow, N. S.

EVERY INCH A FIRE-FIGHTER

A Sound Investment in Fire Protection

FWD
FOUR WHEEL DRIVE
FIRE TRUCKS

The Four-Wheel Drive Auto Co., Clintonville, Wisconsin, U. S. A.

Canadian Factory KITCHENER, ONTARIO